

STABILIZING INDUSTRIAL EMPLOYMENT

REDUCING THE LABOR TURNOVER

The Annals

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MAY, 1917

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L. S. ROWE, President.

CONTENTS

	Page
FOREWORD.....	vii
Editor in Charge of Volume.	
 <i>PART I—SURVEY OF METHODS TO BE USED IN REDUCTION OF LABOR TURNOVER</i>	
ADVANTAGES OF CENTRALIZED EMPLOYMENT.....	1
E. M. Hopkins, President, Dartmouth College, Hanover, N. H.	
HOW TO REDUCE LABOR TURNOVER.....	10
Boyd Fisher, Vice-President, Detroit Executives' Club.	
 <i>PART II—THE ANALYSIS OF TURNOVER</i>	
THE TABULATING OF LABOR TURNOVER.....	33
E. H. Fish, Employment Manager, Norton Co., Worcester, Mass.; Chairman, Committee on Labor Turnover of the Boston Employ- ment Managers' Association.	
DETERMINING COST OF TURNOVER OF LABOR.....	44
Boyd Fisher, Vice-President, Detroit Executives' Club.	
 <i>PART III—REDUCING TURNOVER IN CERTAIN PLANTS</i>	
AN ACTUAL ACCOUNT OF WHAT WE HAVE DONE TO REDUCE OUR LABOR TURNOVER.....	51
John M. Williams, Secretary, Fayette R. Plumb, Inc., of Philadelphia and St. Louis; President of the Philadelphia Association for the Dis- cussion of Employment Problems.	
THE REDUCTION OF LABOR TURNOVER IN THE PLIMPTON PRESS.....	71
Mrs. Jane C. Williams, Employment Manager, Plimpton Press, Nor- wood, Mass.	
 <i>PART IV—PHYSICAL CONDITIONS AS FACTORS IN REDUC- TION OF TURNOVER</i>	
THE STANDARDIZATION OF WORKING ESSENTIALS.....	82
Lillian Erskine, Investigator of Occupational Disease, New Jersey Department of Labor, in Collaboration with John Roach, Chief of the Bureau of Hygiene and Sanitation, New Jersey Department of Labor.	
RECOMMENDED STANDARD PRACTICE ON MEDICAL SUPER- VISION IN DETROIT PLANTS.....	96
Report of a Committee of the Detroit Executives' Club.	

THE WORK AND SERVICE OF THE FACTORY NURSE IN MANUFACTURING PLANTS.....	107
Nathalie C. Rudd.	
PERSONNEL AND MEDICAL AUDIT.....	117
F. E. Weakly, Manager, Department of Efficiency, Montgomery Ward and Company of Chicago.	
PLANNING PROMOTION FOR EMPLOYEES AND ITS EFFECT IN REDUCING LABOR TURNOVER.....	136
Philip J. Reilly, Employment Manager, Dennison Manufacturing Company.	
THE REDUCTION OF ABSENCES AND LATENESS IN INDUSTRY	140
John S. Keir, Instructor in Industry, Wharton School of Finance and Commerce, University of Pennsylvania.	
CONCLUSIONS FROM A SURVEY OF OVER FIVE HUNDRED EMPLOYEES' BENEFIT ASSOCIATIONS.....	156
W. L. Chandler, Dodge Manufacturing Company, Mishawaka, Indiana.	
 <i>PART V—EMPLOYEES' VOICE IN MANAGEMENT</i>	
WHO IS BOSS IN YOUR SHOP?.....	167
Morris Llewellyn Cooke, Consulting Engineer, Philadelphia.	
SUGGESTIONS FROM EMPLOYEES HELP COMPANY SAVE MONEY.....	186
Edwin A. Hunger, Eastman Kodak Company.	
CENTRALIZED LABOR RESPONSIBILITY FROM A LABOR UNION STANDPOINT.....	191
A. J. Portenar, Brooklyn Public Employment Bureau, New York State Department of Labor.	
THE MECHANISM OF MIND.....	202
Simon N. Patten, University of Pennsylvania.	
CAUSES OF "TURNOVER" AMONG COLLEGE FACULTIES.....	216
Hugo Diemer, B. A., M. E., Professor of Industrial Engineering, Pennsylvania State College; Formerly Superintendent, National Motor Vehicle Company; Production Manager, Goodman Manufacturing Company, and Consulting Engineer.	
BOOK DEPARTMENT.....	225
INDEX.....	242

CONTENTS

v

BOOK DEPARTMENT

THE BUSINESS MAN'S LIBRARY

BARNETT and McCABE— <i>Mediation, Investigation and Arbitration in Industrial Disputes</i> (J. T. Young).....	230
BROWN— <i>Principles of Commerce</i> (T. W. Van Metre).....	232
COMPTON— <i>The Organization of The Lumber Industry</i> (M. Keir).....	230
COTTER— <i>The Authentic History of The United States Steel Corporation</i> (M. Keir).....	231
DROEGE— <i>Passenger Terminals and Trains</i> (T. W. Van Metre).....	232
DUDLEY— <i>Finance and Life Insurance</i> (B. D. Mudgett).....	231
FILSINGER— <i>Exporting to Latin America</i> (R. Patchin).....	227
JONES— <i>The Administration of Industrial Enterprises</i> (M. Keir).....	229
MOULTON— <i>Principles of Money and Banking</i> (T. Conway, Jr.).....	227
PHELPS— <i>Selected Articles on the American Merchant Marine</i> (G. G. Huebner).....	233
PHELPS— <i>Selected Articles on the Government Ownership of Railroads</i> , revised. (G. G. Huebner).....	233
PHILLIPS— <i>Readings in Money and Banking</i> (T. Conway, Jr.).....	227
SCOVELL— <i>Cost Accounting and Burden Application</i> (S. Bell).....	225
SHAW— <i>An Approach to Business Problems</i> (M. Keir).....	229
U. S. FEDERAL TRADE COMMISSION— <i>Report on Cooperation in American Export Trade</i> (W. E. Warrington).....	229
WERNER— <i>Factory Accounting</i> (R. B. Kester).....	226

ECONOMICS

FETTER— <i>Economics</i> (W. I. King).....	234
GIRAULT— <i>The Colonial Tariff Policy of France</i> (R. S. MacElwee).....	234
JUGLAR— <i>A Brief History of Panics</i> 3rd ed. (E. M. Patterson).....	235

POLITICAL SCIENCE

BARKER— <i>The Foundations of Germany</i> (C. G. Fenwick).....	235
DAVIS— <i>Elements of International Law</i> , revised (D. G. Munro).....	236
GIBBONE— <i>The New Map of Africa</i> (C. L. Jones).....	236
HOLDICH— <i>Political Frontiers and Boundary Making</i> (C. L. Jones).....	237
MATHEWS— <i>Principles of American State Administration</i> (J. T. Young)....	238
PHILLIPSON— <i>Termination of War and Treaties of Peace</i> (J. W. Garner)....	238
VALDÉS— <i>Pan América y el Problema de la Defensa Naval de Chile</i> (D. G. Munro).....	239

SOCIOLOGY

KELSEY— <i>Physical Basis of Society</i> (E. A. Ross).....	240
LE BON— <i>The Psychology of the Great War</i> (J. P. Lichtenberger).....	240
MINER— <i>Slavery of Prostitution</i> (H. Glenn).....	241

THE HISTORY OF THE
CITY OF BOSTON
FROM 1630 TO 1800
BY
JOHN H. COLEMAN
IN TWO VOLUMES
VOL. I
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FOREWORD

Labor turnover refers to the hiring and firing of men. By excessive labor turnover is meant the excessive hiring and firing of employes. Speaking broadly, the average concern hires or fires as many people during the year as are on its payroll. This great flow of labor from shop to shop is a serious loss both to employer and employe. Estimates of the cost to the employer of securing, hiring and adjusting the new employe to an organization range from \$30 to \$500 per individual.

More than this, it makes difficult the formation of an *esprit de corps* in an organization, and makes almost impossible extensive participation by employes in management. The degenerative effects of excessive labor turnover on employes are too obvious to need mention.

The bettering of this condition will require the development of a "fourth arm" of industry, which will specialize in the scientific dealing with personnel as the production, sales and financial departments specialize in their respective fields. The methods of this science are not standardized. This volume is edited with the hope of contributing to the forward movement of this science by presenting a description of the work of some plants or individuals who have paid conspicuous attention to this subject.

I wish to acknowledge my indebtedness particularly to Mr. Boyd Fisher.

JOSEPH H. WILLITS, PH.D.,
Editor in Charge of Volume.

ADVANTAGES OF CENTRALIZED EMPLOYMENT¹

By E. M. HOPKINS,

President, Dartmouth College, Hanover, N. H.

It is not my intention to speak of the advantages of centralized employment work as an untried thing, or even as a new departure. Progress has been so definite along this line that it is becoming the exceptional thing among conspicuously well-managed concerns to find those which have not established functionalized employment departments. There is not a city in the country in which there is not a considerable number of companies of the first importance which have accepted the principles of employment work as of fundamental importance.

EVOLUTION OF CENTRALIZED EMPLOYMENT

The centralized employment department is the natural successor in the evolution of business from the methods which have been common in business since industry first began to assume its large importance in the world's affairs. In the very beginning labor-saving machinery came in. Somebody invented the loom and set it up in an English kitchen. Then someone figured that, if power could be found, a further advance in production would be made that would enormously increase economic wealth. At this point the centralization of labor-saving machinery became necessary, in order that the sources of power might be accessible. Thus we came to the factory. The first application of power to machinery was the water power; then came the invention of steam and a whole world of possibilities was opened up for the development of the factory system. The first factories were barns and sheds and old houses. Then someone, considerably later, decided that the machinery could be set up to greater advantage in a special building. So production came to the understanding of the importance of factory construction, from which time the study and development of this has been constant.

¹Address delivered before the Philadelphia Association for the Discussion of Employment Problems, November 8, 1916.

Then, men began to see the advantage in arranging the machinery so as to facilitate routing in the processes of manufacturing. So, in the evolution, scientific management developed. Scientific management is not an arbitrary and machine-like way of doing things, as sometimes it is interpreted to be; but it is rather the recognition that there is one best way of doing each specific thing in the world, and that study and effort to discover that way is well worth while.

Thus through the evolution from labor-saving machinery, sources of power, factory design and scientific management, we come down to the latest factor in the development of the competitive method. At the present time there is nothing in particular that one intelligent concern can do over another equally intelligent in the securing of raw materials. There is nothing that one well-administered concern can do that gives it an advantage in policy over another concern equally well-managed. All can buy the same kinds of machinery if they know where to get it; or they can design the same kind. Processes cannot now be kept long entirely secret. Nothing is secure which rests on the assumption that the competitor cannot know how it is done. Thus it has come about that those who want to be put on a permanent basis of profit desire to establish a reputation for intelligent and considerate action which will make people want to stay with them. It is coming to be understood, in other words, that the opportunity for increased dividends and for advantage over competitive concerns, lies largely in the relationship which can be established with the men and women who make up the productive labor force. Thus it is that attention is being not only attracted to, but literally riveted upon, this great unsystematized and long entirely neglected field of problems of personnel.

The movement is under a headway that cannot be stopped; and some concerns who will not openly admit their interest in matters of this sort are in effect, though under different names, earnestly, even if unintelligently, seeking a basis of action which shall remove industrial unrest from their organizations. The one *greatest* problem in American industry at the present time is how to get, and how to keep, a labor supply which will do the work at hand in the best and the most profitable way.

BACKWARDNESS OF AMERICA

We pride ourselves on our industrial progress in the United States, and we are wont to boast of the advantages of our methods over those of other countries. But yet, we have come very late to this problem. The success of Germany in carrying on the present war, in which she has shown such remarkable resourcefulness and such remarkable ability, is due no more to her efficient handling of men and arms than it is due to the fact that she has spent years in specializing on human relations in industry. Social adjustments had been worked out to greater scientific accuracy in Germany than in any other country. England's problem was how to apply the talents and potential ability of her men and women to the stern necessities facing her in problems of production, no less than in matters of military and naval policy. In America at the present time, amid all the shortages that exist, the one great overwhelming shortage is of men and women properly equipped to do the work which is available for this country to do, if only we can handle it.

Two years ago a manager of major rank in a great Philadelphia plant told me: "We are not interested in problems of personnel. We have a lot of work; but there are always more people to do it than there is work; and if those we have do not wish to work under our conditions, they can go, and we will go out and get others." Even so soon the folly of such a remark is apparent. The shoe is on the other foot. The work is available in quantities, but workers can hardly be secured at any wages.

No one knows exactly what will be the result on industry in America at the end of the war. It is a certainty, however, that one of two alternatives will have to be faced: either we are going into an era of unprecedented prosperity, and will continue to need, as we are coming to need now, people who are trained to our work, who are loyal to our organizations, and whom we can induce to remain steadily with us; or else we are going into an era of competition and price-cutting, when every element of risk must be eliminated, and when every element of waste must be guarded against, when manufacturers must come down to the basis of utilizing every advantage at hand.

A Chicago man said to me recently:

Up to a few weeks ago I insisted that there was nothing in centralized employment for us. But I came to the conviction that there was a true analogy in this to our purchasing department. Two years ago we put a man in charge of purchasing simply our printed forms; and I found a few weeks ago, upon investigation, that this centralized responsibility has saved us over \$35,000 in two years. Somehow, out of this I saw the argument for the employment office. If the removal of responsibility for printed forms from our department heads accomplished so much, what wouldn't happen if in like way we removed responsibility for the purchase of our labor?

ATTITUDE OF DEPARTMENT HEADS

Recognition has to be given to one thing in considering the establishment of such a department. For some reason the average man feels that his bailiwick is invaded unduly if in any way authority is taken away from him in regard either to the hiring or to the discharge of employes whose work he is directing. It is almost impossible to convince foremen or department managers that many men in their places who have held ideas like theirs have come to feel that they have been relieved of a burden of whose weight they had no idea while it was upon them. Many a man has come to feel relief at the opportunity to apply himself to the specific work in which he was skilled, as he never had the opportunity to do while held responsible for keeping up his own labor supply. Experience justifies the argument that a well set up employment department, tactfully managed and administratively endorsed, will vindicate itself to the worst skeptics, if it is but given time.

We must not lose sight of one matter, which is a weakness not yet corrected in modern theories of organization, using the term organization in its technical sense. The transition from the old-time unit type to the functional type of organization has brought in its train of major advantages certain weaknesses which remain to be corrected. There is always the tendency, in this newer form of organization, that goes inevitably with specialization, to narrow the range of solicitude on the part of the various executives of lesser rank and their respective subordinates, from concern for the company's interests as a whole to concern simply for the functionalized department. This is a natural outcome of the period when maximum emphasis had of necessity to be placed upon departmental boundaries in order to establish the system. But once established, the system requires that connection of one man with another

should be not simply by route of the charted lines of an organization sheet, but that all who have to do with the company's business should feel definite relationships with all others of the force, to an extent that each should have concern that all responsibilities of the company should be met in whatsoever functionalized department they might appear.

The one great weakness that the functionalized organization has failed to correct is a tendency to breed executives without antennae for the interests of respective organizations as wholes. It is, of course, a fault that can be corrected only slowly, and even then must be a matter of the spirit in which the worker is bred rather than the way in which organization should be outlined on printed charts.

It is all very difficult and hard to get at; but it is all tremendously involved in the question of how to create the new spirit of *esprit de corps* and coöperation, which successful industries will have to create. It is studies such as are involved in questions of this sort that become a vital part of the comprehensive work of a well designed employment office; and it is by such avenues that it can become of maximum usefulness to heads of concerns.

Another difficulty is the fact that in concerns where broad and intelligent policies prevail at the top, and where systems are installed looking to the betterment of the lower grade positions, there is such frequent failure to transmit the spirit behind these things beyond a small group at the top who know just what they are all about. Sometimes this group attempts to familiarize a somewhat larger group, subordinate to them, with the motives and the spirit behind proposed projects; but usually the scheme never gets down to the mass of productive workers in any form that carries conviction to their minds that there is a broad conception behind it. Therefore, not knowing what these things are all about, they become skeptical; and in this frame of mind the original good is so completely neutralized that there is little advantage to the company in having had the broad conception at the initiation of the plan. The point I am trying to make is, that too often there seems to be a complete insulation between the people at the top of the company and those at the bottom, due to the mental or spiritual inability of sub-managers and sub-foremen to transmit the spirit of men higher up to those lower down. It is here again that the

intelligently administered employment office can become of value entirely disproportionate to any cost involved in maintaining it.

RELATIVE IMPORTANCE OF EXECUTIVES AND WORKING FORCE

There is another fallacy to be overthrown, and that is the old-time autocratic and arbitrary theory that the subordinate productive worker exists to supplement the efforts of the executive over him. It is now coming to be recognized that executives exist rather to correlate and supplement the efforts of the productive force. One cannot argue this case as a whole without going into an immense amount of detail, but superficially it is true that the world's work would be far more completely done if all executives were to be wiped out of existence at one stroke than if all productive labor were to be.

If we are forced to accept the hypothesis of the complete elimination of one group or the other, I think that most of us would spare the executives before we would the productive force. Men in the highest positions, however, will concede this far more quickly than the foreman who has just been promoted from the ranks.

There is an assumption that needs to be guarded against in any consideration of the establishment of an employment department, namely, that employment is a term covering an occasional thing. The attitude has been too frequent that the whole problem was to get the man in, and that once in the system he is in a hopper and as the mill grinds he will be ground out either as wheat or chaff. Leaving the ethics of the matter entirely aside, we cannot as a matter of profits continue to have so much lost as chaff. It costs too much continually to feed the hopper. Having secured the force, there is financial advantage to a company in keeping it and in maintaining it under such conditions that the individuals composing it will be unwilling to leave. There is nothing visionary about this proposition. It comes down to the fundamental basis of the financial welfare of the concern.

SUPERVISION AFTER HIRING

This brings up the point of the function of the employment department after the labor force is engaged. The curse of industry in the past has been the impersonal nature of its administration. This is a very real danger at the present time in the development

of the theory of the employment department. This department, more than any other, cannot afford to become impersonal. It is, in my estimation, the danger of the whole tendency of the present day to judge by prescribed tests in regard to the retention or rejection of workers either on the job, or in regard to those being newly sought.

But having secured an individual to do our work, and having got him established on a basis satisfactory to the department into which he goes, what, then, is the realm of the employment department? There can be no question that the respective department heads must be the final judges in regard to the grade of work and the desirability of retention of the individual employe under them. They know the work to be done. However, I believe that it is a kindness to them, as well as to the people under them, that some department outside of theirs shall continually watch their policy and appraise it by outside standards in relation to its policies with the people working therein.

There is a factor involved in many a discharge which never comes to be known by the man who cuts the relationship between the company and the individual. If the people of our productive forces are going to work with enthusiasm and loyalty, they must have confidence that discharge is not coming to them because of conditions over which they have no control, and that a peremptory dismissal shall not come to them for temporary impairment of ability which has been preceded by faithful and painstaking work. There must be some avenue through which information can be secured as to the justice of the action of the man above, as well as to the basic reason for the fault of the man below. If it is discovered that a man has fallen off in his work, due to some temporary condition of such a nature as would have impaired the work of the highest executive as well as that of the lowest operative, the man down the line who receives the discharge is going to resent bitterly the lack of opportunity for him to bring out the extenuating circumstances, which he knows would be so plainly evident in the case of the man of higher rank. For some such reasons as these an employment department ought to have a definite right of access to individuals throughout the plant. It is hard to estimate what a brake on unreasonable discharge may be established by such a contact. Hardly a concern at the present time would think of making pay-

ment on its checks legal without a second signature; and yet industry goes on dealing with the lives of men and women on the basis of individual caprice on the part of its less intelligent executives.

The so-called welfare work, the rapidly increasing province of accident prevention and health preservation, and the policy of special training which we somewhat euphemistically call educational work, are all details of the general purpose which ought to lie under the establishment and maintenance of an employment department. Such a department should report to the head of the business. If it is not important enough to do this it ought not to be established.

POSITION IN THE ORGANIZATION

Such a department should be given the responsibility of securing the labor for the different departments of the plant; and the procedure should be established that men and women be secured through this department until it becomes evident that it cannot render value. In my estimation such a department does not need arbitrary power, but it does need a sympathy of understanding from those at the head of the business, and an endorsement which shall give it standing with those of lower rank. Such a department should be given access enough to all portions of the plant so that it may effectually act as a check on the non-comprehending department head who has no ability or intention to do anything except to exercise arrogantly such power as inheres in his position. The employment manager exists not so much to say that things shall be done or that they shall not be done, as he does to know what is taking place and the reason therefor.

Such a department cannot be defined as any specific thing in any specific concern, because it will differ so much in one from another. But the fundamental purpose will be much the same. It ought to be the first aid for getting the best people for the positions; and it ought to be the big brother of all the department heads in their effort to keep and train their men so that these shall be of greatest use to themselves, to the concerns involved, and to the community.

Is there some process available in your organization, by which those men who are worthy can be given an opportunity to work with

some security of tenure and have opportunities to make themselves of added value to the company? If so, the centralized employment department should find it. The successful industry of the future is going to be set against a social background in which a healthier status will exist not only for men's bodies but for men's minds. It is in developments such as these that the centralized employment department can be of vital advantage. And the advantage is not an intangible one, for it will be found to translate itself definitely and permanently into dollars and cents.

HOW TO REDUCE LABOR TURNOVER

BY BOYD FISHER,

Vice-President, Detroit Executives' Club.

No one knows how much it costs to break in new men. The most conservative estimate of any authority is \$40 per man, but this, as well as every other estimate, is, after all, only an estimate. No one has yet used an exact cost system for recording the waste of unnecessary hiring and firing. I myself prepared such a system and submitted it to the employment managers' division of the Executives' Club last September. As yet no one has put it into effect, although several plants have promised to do so as soon as conditions warrant.

THE GREAT COST OF LABOR TURNOVER

Aside from the rather careful estimates made by W. A. Grievess and Magnus Alexander, we have only occasional flashes of evidence as to the great cost of labor turnover. One of the most startling evidences, which has come to my attention, may be gleaned from the report of a meeting of the production methods group of the Executives' Club on September 20, 1916.

Mr. J. T. B. Rheinfeldt, head of the manufacturing standards department of the Packard Motor Car Company, had explained the methods by which his department had rated the expected capacity of every machine and production center in that great plant. He gave out the information that the ideal capacity was 25 per cent higher than the expected capacity—that is, his company has 25 per cent more equipment than would be necessary to turn out the work, if it were not necessary to allow for delays, breakdowns and low-speed production.

I now quote from the minutes:

Mr. Beatty asked if the standard time allowed to the men were included in the 25 per cent allowance or not.

Mr. Rheinfeldt said that whenever a method was changed, a new time study was made. The allowance of 25 per cent was a blanket to cover shortages, absence, keeping the machine going, repair, etc.

Mr. Fisher asked how much of the 25 per cent was due to the turnover of labor

—that is, if there was no absence to be contended with, how much this 25 per cent could be reduced.

Mr. Rheinfeldt said that if the labor turnover were zero, the factor could be eliminated entirely, as the allowance on the time study would care for the repairs, breakage of tools and machines, etc.

Think of this for a moment. The physical equipment of the Packard Motor Car Company is worth, in round figures, \$9,000,000. If the turnover of labor were reduced to zero, this huge investment could, in Mr. Rheinfeldt's opinion, be reduced by \$1,800,000. The interest at 6 per cent on this amount of money is \$108,000 per annum.

Nor is this all. Is it not fair to assume that labor cost would also be reduced 25 per cent if there were no turnover? If so, out of 12,000 employes the wages of 2,400 men and supervisors, anything from a million and a half to two and a half million dollars a year, could be wiped out.

Now a word about the reliability of the above figures. They are not worth very much. In the first place, Mr. Rheinfeldt may have been in error in estimating his ideal capacity. He may have overstated the case, too, when he gave it as his opinion that a complete elimination of turnover would eliminate the 25 per cent extra capacity added to the standard time allowance. Furthermore, I have purposely avoided giving exact figures on equipment investment and on the wages of one-fifth of 12,000 employes. I do not want the figures on cost of turnover in the Packard plant to seem to be exact.

But I do want to enforce this point. The Packard employment department is one of the oldest and best conducted in Detroit. It has already effected vast savings in cost of turnover and yet the head of the standards department, the man who, with his assistants, sets all standard working times in the plant, estimates that new and inexperienced workmen reduce the speed of production so much that a 25 per cent allowance of equipment, buildings, direct labor and supervision must be made.

Figure what it would mean to your company annually to add 25 per cent to your cost to break in new men. Do you know that it doesn't? We have no true figures for cost of turnover as yet. Until we get them we must rest our case upon such indirect evidences as Mr. Rheinfeldt's startling estimate.

We can also gather other evidences of the cost of breaking in new men by a study of plants which have kept a steady force, and by comparing production records per man at the beginning and at the end of the periods during which the reduction of labor turnover took place. This, however, is not a very reliable guide, because a good part of the increased production might have come from the introduction of more scientific methods. It is significant, however, that every plant in Detroit that has reduced its turnover of labor in the last year has increased output per man. In some cases it has doubled.

REDUCTION OF TURNOVER IS PRACTICABLE

It is not necessary, in fact, to prove that losing men costs money. There is a very general agreement upon that point and there is also a pretty general agreement upon the possibility of ascribing to success in creating a stable force some of the increase in production which appears concurrently. Employment managers, I take it, desire not so much to be persuaded that it is worth while to discover methods of reducing the needless exchange of employes as to have proof that they can keep men on the job by definite methods which have succeeded in other plants.

I have some very interesting figures on the reduction of turnover in Detroit plants during the last year, or thereabouts. Labor conditions during this time have been very disheartening, and, in all firms where employment departments have been established for a long time, the exchange of employes, in spite of intelligent work, has increased during the last year. This is a very interesting fact when taken in conjunction with another distinct and contrasting fact; namely, that in all plants that have installed employment departments within the last year or more, the turnover of labor has generally declined during this bad year.

Take the Saxon Motor Car Company, for instance. Its employment department has been in full running order only a little over a year and in the first year of its operation it has reduced labor turnover 140 per cent. This figure is obtained by subtracting the turnover figures at the end of the year from the turnover figures at the beginning. The employment manager of this company predicts a 50 per cent further reduction during the coming year, which will be bringing it down pretty low.

Take, again, the Hayes Manufacturing Company, where the employment department was established in April, 1915. In the first year of operation turnover was cut practically in two. And then in the next four months, from April to August, the turnover was more than cut in two again and has been declining slightly ever since. This reduction was accompanied by a 30 per cent increase in output per man. Then there is the Timken-Detroit Axle Company where the labor department has been in operation for sixteen months and where foremen are given a bonus for what is known as "force maintenance efficiency." During these sixteen months, this efficiency has increased 20 per cent. I refrain from giving the figures upon which this percentage is based because the Timken Company does not desire to reveal the exact turnover data.

One of the most remarkable records I know of, with regard to reduction of turnover as the result of the installation of a complete labor department, is that of the Solvay Company of Detroit. The record is so good that I am going to take the risk of quoting the exact turnover figures. The Semet-Solvay (Coke) Company and the Solvay Process Company occupy adjoining factories on the same plot of land but maintain entirely separate managements. Up to the first of June, 1916, the Semet-Solvay Company had an employment department and the Solvay Process Company, on the other hand, permitted each foreman to hire his own men.

When it came to the attention of the management of the Solvay Process Company that they were having labor difficulties which did not appear in the Semet-Solvay, the employment manager in the Semet-Solvay was given entire charge of hiring and firing in both plants. The average turnover for the two plants during the month of May was 10 per cent. In the month of June, after the employment department had taken over the work of the Solvay Company also, the turnover of the two plants dropped to 8.3 per cent. In July it was 8 per cent; in August, 4.1 per cent; in September, 3.3 per cent; in October, 3 per cent; in November, 2.6 per cent; in December, 2.4 per cent. This is the most remarkable record of employment department efficiency that I know of anywhere and when you take into consideration the fact that the average turnover of labor in Detroit was jumping up by leaps and bounds at the same time that the Solvay companies were greatly reducing their turnover, it appears even more surprising.

I have just analyzed the turnover figures for the last year in fifty-seven Detroit plants, and find that they average a little over 252 per cent per plant. This is, of course, very high because labor conditions have been unprecedentedly bad. The figures, however, are not as high as they would be if they did not include the comparatively low averages of plants having employment departments, as well as plants which allow foremen to do their own hiring and firing. An analysis of plants having labor departments against those having no labor department shows that, roughly averaged, the plants having no employment department hired three men to every two hired by those which did have employment departments.

I do not attempt to give more exact figures because I am somewhat skeptical of the correctness of many of the reports which came to me; particularly from plants that have no regular employment department. I suspect that if we had entirely reliable figures from all plants, the record of those having no employment departments would show up even worse in comparison than they do.

A COMPLETE PLAN FOR REDUCING TURNOVER

It would be enlightening, if there were space, to take each individual case of labor turnover reduction and trace out the methods by which this was accomplished. In a fairly short presentation, however, it is preferable to outline a complete scheme for labor turnover reduction based upon the combined experiences of a number of plants having employment departments. I desire, therefore, to offer what appears to be a combination of all the approved remedies for what is sometimes known as the "mobility of labor." Obviously not all parts of the complete scheme can be applied to every plant. And good authorities may feel that some of the methods outlined have no business to be in the scheme at all for any plant.

Permit me at the start a doubtful generalization. A certain manager of a Detroit plant, which had a complete installation of scientific management and which was used as a model for study by all other Detroit plants, left to take over the management of an automobile company in another city. He found the new plant devoid of any semblance of scientific management, and yet for a whole year he did nothing to change the internal methods of this plant. He found upon analysis that 80 per cent of the cost of his product came in the purchase of products made in other plants. Therefore,

in order to reduce the cost of his product he found that he would have to spend most of his efforts in reducing the cost of the products made outside. So it is, I think, with labor turnover. I believe that we may safely say that 80 per cent of the cost of turnover of labor is due to causes that lie outside of direct plant activities; that is, when the workman is off duty.

Now the remarkable thing that is developing in employment work in Detroit is a disposition to tackle the whole job of reformation. Like the automobile manufacturer just referred to, our employers are striving to reduce the 80 per cent item of cost of inefficient labor where the expense is incurred; that is, outside of their own plants. They recognize that turnover of labor is a special phase of the problem of inefficient labor and that the reduction of turnover is only the first step in a process of education and of economic pressure to elevate the standards of workmen. They aim not only to keep workmen, but to develop them. And they are prepared to go as far, even, as the workmen's own home-life to solve their problem.

Much of the impetus to this thorough-going effort comes from Henry Ford. Employers sometimes feel that they have much to forgive in Henry Ford, but most of his fault lies in doing so many things first. One of these is the extension of factory influence into the whole life of the worker. All Detroit plants are beginning to follow him in this, and I honestly believe that they are profiting by his experience, and are taking the best and leaving the worst of his plan. Denied the credit of initiating the plan and free from the fear of precipitating any such startled inquiries as have beset Mr. Ford, they are able to proceed slowly, quietly and cautiously. The results so far have been good.

Miss Ida M. Tarbell came to Detroit prepared to revolt at un-American interference with the private concerns of workers as evidenced by the Ford procedure, and went away convinced in its favor. Of the Ford scheme she said to the Executives' Club, "I don't care what you call it—philanthropy, paternalism, autocracy—the results which are being obtained are worth all you can set against them, and the errors in the plan will provoke their own remedies."

THE RELATIONS BETWEEN TURNOVER, INEFFICIENCY AND VICE

So you will find in my scheme of labor turnover reduction a concrete statement—a bill of particulars, so to speak—of the phi-

losophy of the more progressive Detroit employers. Turnover breeds inefficiency. Inefficiency breeds turnover and the only way to break the vicious circle is to attack them, both at one time, and, for the most part, outside of direct factory activities.

The employment department in this view becomes the vestibule not alone to the factory, but to a better life. The employment supervisor becomes a copartner with the teacher, the minister, the social worker in the business of reforming men. It wasn't Billy Sunday, it was the employers of Michigan that put the state in the prohibition column. They wanted to remove the saloon on the route between home and the factory. For the sake of securing more efficient workmen, our employers and their personal representatives, the employment managers, are fighting for the elimination of vice and gambling through Mr. James Couzens, formerly vice-president of the Ford Company, and now police commissioner. They are fighting for better schools through Mr. Mumford of the Edison, and now president of the school board, and for better city government, more adequate housing, and better street car facilities through the disinterested public services of many busy manufacturers.

Nor do our social reforming employment managers confine themselves to dragnet measures of improvement. The scheme I have assembled is a routine of particular measures involving the doctrines of "from each manufacturer according to his ability" and "unto each workman according to his need." Nearly every measure outlined is actually in effect in some Detroit plant and all of them, based upon experience somewhere, are at least in project.

DIFFERENT REMEDIES FOR TURNOVER

Let us take up remedies for labor turnover and inefficiency under four main headings: *preliminary, fundamental, supplemental* and *provocative* remedies, and speak first of the provocative remedies.¹

I believe in firing men as a final means of keeping men. We are in danger of getting too sentimental about turnover. We are too likely to regard every man lost as an unwholesome sign. There is a legitimate place yet for the "tin can" and when it is tied to man or beast, it ought to have something in it to make it rattle. But the condemnation that reverberates most noisily is the deliberate un-

¹See outline of these remedies, pages 29-32.

favorable judgment of one's peers. I believe that every discharge should be certified to by a committee on which workmen are represented. This is my notion as yet, but Dodge Brothers go as far as providing a blue envelope committee, and no arbitrary individual judgment can effect a discharge. Slowness and cautious fairness in getting into action, however, only advertises the final result. When a man goes out of that plant, he isn't summarily kicked out, it is true, but it looks much more impressive to be shoved out slowly by a consensus.

Let us, by all means, have the trump card of discharge in our hand and then strive to win by playing off suit. If it is clearly understood by workmen that the patience of the management is the forbearance of strength and self-control, all our other methods of reducing turnover will gain in effectiveness.

Now, strictly speaking, what I have classed as preliminary measures: namely, a cost system and a record system for turnover, do nothing in themselves to retain a permanent working force. But, without them, the effective measures are not likely to be applied.

A true cost system is an urgent necessity. If it is true, as Mr. Magnus Alexander estimates, that it costs \$73.50 to break in a new semi-skilled operative and only \$8.50 to take on a new laborer, mere percentage figures for turnover mean very little. I will not go into details at this time but I submit that we should know how much each type of new worker costs, in terms of diminished production resulting and of the excess equipment investment needed, increased scrap incurred and increased supervision and education required. Managers may affect to believe that it costs \$400,000 a year to hire 10,000 men, but they won't spend even \$50,000 to save that sum until you prove incontrovertibly the actual expense of new men. The thorough-going remedies for turnover are so expensive that until even the most skeptical managers are convinced we shall not get far with our corrective measures.

As for a complete record system, little preachment is necessary. The aim should be twofold. The records should reveal graphically not only the extent but the causes of turnover, and they should reveal the parallelism between high turnover and low efficiency. The basis, of course, is an individual register for each man, so complete that all other reports can be drawn directly off of this. Aside from the usual historical facts, showing dates of employing or transferring,

the starting rates and changes of rates and date of leaving employ, together with original application and examination forms, this individual record should be a chronicle of the workman's progress, on such items as earnings and bonuses, defective work, absences and tardiness, his complaints and those charged against him, a periodic certification by foremen, and, when he leaves, his apparent or declared reasons for going.

The turnover should be analyzed at least monthly, and the record should show: (a) by weeks, months and years, how long quitters have been in the employ, in order to reveal the critical periods when men are most lightly attached to their jobs; (b) by departments, to show what foremen or class of work are most at fault, and (c) by reasons assigned, to show what conditions call for improvement. It should show, also, (d) what operations furnish the greatest mobility, so that, if a cost of new employes has been established for each operation, the monthly losses from turnover can be exactly computed.

Fundamental remedies for turnover differ from what I call supplemental only in relative importance. If you hire men wisely, provide them with steady work at an adequate wage, and refrain from hasty discharges, your turnover will be comparatively low.

The supplemental remedies are refinements designed rather to promote efficiency in the man you keep, than to furnish additional means of keeping them, and are likely, thus, to exercise an indirect influence in reducing turnover.

IMPORTANCE OF CARE IN HIRING MEN

It is almost begging the question to say, hire the right men for the jobs, because, obviously, the right man is the man whom you will like and who will like you. But there is room for so much development here that I know of almost no other remedy that will reach so far. When foremen hire, they grab the first man who shows up, and fire him when he doesn't make good. And a good many employment managers do almost the same thing. In part, this is due to the fact that they haven't the resources to write up exact specifications for all the jobs for which they employ; still more because none of us has thoroughly satisfactory tests of ability and character. But still more it is due to enforced haste in filling requisitions. Foremen, planning department men and managers do not

give the employment department enough notice of men needed. A list of men required for the year's predicated production should be just as much a part of the engineering department's specifications as the blue prints and the routing. It is certainly as easy to predict men required as to predict cost, for without the labor, how can the cost be estimated? And, yet, how many employment departments know two days ahead, even, the men they will be called upon to hire? I say, inform your employment manager as far ahead to supply new men as you inform your purchasing agent to supply material.

With advance information he can build up the right kind of application list. If your files list only men that have applied voluntarily, it will be as unsatisfactory as a list of sales prospects that you might secure without solicitors or advertising.

The best application file is really a prospect file, built up as the result of a census of the workers suited to your plant, in your whole city and particularly your vicinity. The Cole Motor Company of Indianapolis has just completed an inclusive industrial census. The Saxon Motor Company of Detroit tells me that the simple measure that did most to produce its remarkable turnover reductions was the practice of preferring men who live within walking distance of the plant.

With a knowledge of men to be hired, the employment manager can prepare specifications and forms of examination which will do much to eliminate men who would not make good if hired.

Physical examinations are, of course, a necessity in a good system, and they should be tied up with the measures for improving men once on the pay roll, by having the examiner indicate deficiencies to be corrected. But even examinations and such other precautions as visits to the homes of desired applicants, and a checking up of previous records of employment can only be resorted to if ample time for inquiry is secured.

INDUSTRIAL EDUCATION, ADVANCEMENT AND WAGES

There is not space in this paper to deal with the question of industrial education, but it should not be overlooked that one does not always need to go outside of his own plant to put on a new man. It is always cheaper to transfer from a less important position an employee who has been in training for a promotion. A work force can be more certainly toned up by educating apprentices and giving a

continuing and broadening education to operatives than by hiring brand new men by any system of careful selection whatever. The growing demands of industry far outrun the supply of skilled workers, and not only to contribute its share of trained people but even to obtain its share, a plant must coöperate in the general educational program.

Now one of the most basic remedies for turnover is the payment of an adequate wage, and this can be urged only upon plants that have taken pains before hiring to ascertain whether the applicant's home life and standards of living, as well as his mental and physical fitness, promise his being able to earn an adequate wage.

By an adequate, I don't mean merely a minimum wage. I mean a good fat wage—one that will clothe, nourish and educate his children as well as feed him up properly. The Visiting Housekeepers' Association of Detroit estimates that the lowest possible minimum income for a family of five is \$89.00 per month, and no family in Detroit is wise enough to know how to spend that sum well. Eleven plants in the Executives' Club have undertaken deliberately to see that every workman, taking each case individually, by investigation, is sufficiently supported. Some of them discover that for special reasons some families cannot live on \$100 per month. Any number of plants, such as Packard, Cadillac, Solvay and Hudson, not only make general studies of cost of living but particular inquiries, and where necessary, pay off at good discounts the debts of overburdened workers, allowing them to return payment periodically.

In my outline I have indicated a number of ways in which the modern factory management follows up the pay envelope by helping the worker to escape the shark, to purchase wisely, and to stretch the purchasing power of every dollar he earns. Many mutual aid associations and several legal aid bureaus have already been established, and many plants encourage thrift and assist in home building. We not only have seven or eight coöperative stores in process of establishment, but six of them are considering plans to purchase jointly through the Executives' Club. A report on eighty-three successful mutual aid societies has been compiled by Helen Bacon of the Executives' Club staff. It may be obtained for one dollar.

As for the remedy of steady work, you should note that it is just as important to keep piece workers continuously supplied with

work, so that they can earn their expected income, as it is to regularize work from season to season so as to keep a level force. In fact, it is sometimes kinder to men to lay them off outright than to try to keep them while they are earning partial wages. Employment managers cannot do much to regularize production from season to season and from day to day, because these things are largely matters of administrative policy and of factory system, but if they recognize and advertise the importance of these things, they will focus the attention of their superiors upon the necessary remedies.

When I say, finally, under the head of fundamental remedies, don't fire hastily, I mean to urge not only that you curb ill-tempered foremen and curb your own impatience, but I mean, especially, give yourself time to influence men through the slower-acting measures, referred to in this outline under "Supplemental Remedies." It would be of very little avail, either as a means of re-selecting or of disciplining men who had failed in one job, to transfer them from department to department, as the Ford Motor Company, for instance, does with so much patience, unless every day counted not only to give a man new hope but new instruction.

So, I say, start your new men right, promote physical efficiency, foster good habits, make your work an unfolding career, and a sufficient future, and all the time encourage self-expression, not only of complaints but of suggestions and of coöperative interest and activity.

OTHER WAYS TO START MEN PROPERLY

To start new men right means not alone to give them a pleasant and encouraging impression of their new work but also to complete the job of hiring them. A man is not really engaged for a job until he is engaged in it, and too often plants throw needless difficulties into a man's path between the time they agree to hire him and the time when he settles down to work. An agreement to employ, in the first place, is not completed until the new man is given a definite guarantee of his starting rate of pay. You cannot be sure of a man's doing anything but spoiling work for a day and wasting your time if you take him on first and then let the foreman settle his rate of pay afterward.

Give your man a definite starting wage, and, so far as possible, a reasonable assurance of the rates to which he will be advanced at

stated times if he makes certain standards of efficiency. Then, if he accepts your job, you can be more sure of him.

But it is just as important to help a man get over his stage fright in tackling a new job. Most men suffer acutely in contact with strange surroundings. Even experienced workers discover unexpected obstacles in new machines, and most new men will be found to have exaggerated somewhat their qualifications in order to be taken on. You, of course, have discounted their statements, but they go to work uneasy in the thought that they have "put something over" on you and are afraid of being found out. Add to this their awkwardness with fellow-workmen and bosses, both strange to them, and their lack of acquaintance with the plant and you get a frame of mind which makes their work of little value to you, and the job seem undesirable to them.

One of the things which stood out in my mind after reviewing the many excellent methods of the German American Button Company of Rochester was the considerate way this company has of introducing new employees. New people are asked to come at an appointed time later than the hour when work starts, and are introduced by a representative of the employment department to their fellow-workers and made acquainted with the rules, the conveniences and the special attractions of the plant. A fellow-worker is commissioned to take them to luncheon the first day, and special queries are answered. It is important to follow up this method of introduction and to have instructors keep an eye on the new worker till he brings his efficiency up to normal.

It may be, and usually is, necessary to help a worker out with money or meal tickets, or to guarantee his board till the first full pay day. All the workmen I have known individually have gone to new jobs "dead broke." Often they quit on some pretext, after working a few days, in order to draw pay to keep from going hungry. The Studebaker Corporation in Detroit is especially liberal with respect to meal tickets or pay advances to tide the new workman over. Much injustice is done new workers in keeping them on day rates after they have become proficient enough to be put on piece work. While I have not analyzed from this point of view the high turnover of labor which, I know, comes chiefly in the first few weeks of employment, I suggest that a comparison would show that turnover is highest at just the time when new workers should be put on

piece work and are not. I have followed the cases of workers for whom I secured jobs, and know that many cite this as a reason for quitting. Two plants I know of make special rates to beginners higher than the piece rates of experienced employes so that they can measure their progress from day to day and more speedily get on a profitable wage. This is a kind of minimum wage guarantee with the added value of an efficiency scale.

PROMOTING PHYSICAL EFFICIENCY

Assuming our workmen well hired and well started, the promotion of physical efficiency is a direct means of increasing production and of helping men to earn pay which will keep them on the job. There are so many things entering into this that it is a good thing, when the resources of the company warrant, to have a physical department as a branch of the employment division, with a high grade physician and several nurses in charge. There is not space in this paper to mention any of the many plants which do this. The last convention of the American Medical Association devoted a section to physicians in industrial practice, and there is now a national conference board on the subject. The physical department will generally conduct examinations of desired applicants for employment, but I prefer the more economical method of the Flint, Mich., Manufacturers' Association, of a central physical examination bureau for applicants. The general adoption of this plan would free the time of plant physicians, who would still be needed to conduct periodic examinations of all workers, as a basis for advice on better health. Such periodic examinations may be voluntary at the start, and perhaps 70 per cent of the employes will come forward. Later, say after the second or third time, it can be made compulsory. It will reveal surprisingly the causes of low production in many cases, and help to eradicate them. The physical department should supervise plant conditions from the point of view of health, and should have authority on the improvement of ventilation, heating and lighting, and the reduction of noise, dirt and noxious and unpleasant odors, as well as the sanitation of oils and waste, the purification of drinking water and the cleanliness of all public rooms.

The Joseph and Feiss Company in Cleveland and the German American Button Company in Rochester are among the plants which find it profitable to add a dentist and an oculist on part time

to care for the teeth and eyes of employes. Most workmen have bad teeth, with resulting indigestion and other degenerative diseases, and defective eyesight can injure workmen and slow up work before they lead to the danger of accidents.

The physical department, of course, has charge of the emergency hospital, and in this connection it is worth while to say that first-aid should be prompt, adequate and accessible, as it too frequently is not.

But much work should be done away from the plant. Physician and nurses should visit workmen kept home by sickness, that of their families as well as their own, so that they will not be allowed to neglect illness. Home visits help reduce absenteeism, but they are justified on their own account in promoting physical efficiency. Plant doctors making home visits will know how to avoid conflict with other physicians with whose work they may seem to interfere. There are other measures which do not come within the field of a physical department which are advisable, nevertheless, on the score of increasing a workman's efficiency. Such expedients are plant restaurants, shorter work-hours, plant athletics, rest periods during the day, and yearly vacations with pay.

If possible, a factory should arrange to maintain its own restaurant, which, if properly managed, can be self-supporting. It diminishes a workman's energy to eat, possibly at his machine, a cold lunch carried in a paper parcel from home.

SHORT WORK-HOURS AND REST PERIODS

Shorter work-hours, while diminishing output for the day, increase it for the period. On principle I favor the eight-hour day, or, at most, the fifty-hour week, and in some arduous or intensely monotonous tasks I favor an even shorter day.

An investigation which I made a year ago among plants having the short workday convinced me that where a worker is not limited in output by the nature of the process, he will do as much in forty-eight hours as sixty. Of course, to secure this result the plant must be organized to keep him continuously busy for eight hours, and an incentive wage payment system must induce full effort.

My prejudice in favor of the eight-hour day springs wholly from my belief that it is an economy for the well organized factory and a gain for the community. Where issues with unions arise over the

matter or where consideration for the interests of other manufacturers enter the question it may be advisable for a limited time to maintain longer hours on principle. There is always something to be said for the *status quo*, and where hours are to be shortened, the employer has a right to demand time for adjustment so as either to secure some increase in effort from the workmen or to pass on to the consumer the added expense assumed for community good.

Furthermore, I believe that for securing increase in physical efficiency it is preferable to distribute a part of the added leisure time through the workday in the form of rest periods. The Aluminum Castings Company of Detroit gives a five-minute rest period each half day. A company in Rochester allows one rest period of three to twelve minutes in every hour, according to the nature of the work. To secure conformity it shuts down the power and has recreation organized to utilize the time. There is as yet no dependable information on fatigue, in spite of certain German researches and the more recent studies of the British Association and the Munitions Ministry, but the experience of the army with regard to forced marches and the experiments made by Frederick W. Taylor long ago demonstrated measurable benefits from rest periods. Any manager may make a first test by observing the effect of rest periods in his stenographic department. A working principle is that the more repetitive the operation is, the shorter the cycle of time, the more frequent but briefer is the rest required. And, too, I should consider it advisable to make rest periods either longer or more frequent toward the close of the day.

A vacation is one kind of rest period in the above sense. Shop men need it, perhaps more than office workers, and should secure it on the same terms. It is advisable to tie the vacation plan up with the measures to reduce absenteeism by making the length of the vacation with pay vary with the number of weeks of satisfactory attendance. Strike fever is often vacation fever. Shrewd managers, if they had no more altruistic aim, might well plan vacations to promote industrial equanimity.

It is needless to elaborate on the benefits of athletics in relation to health. They are, if anything, more important as self-expression, which I shall mention later.

DEVELOPMENT OF GOOD WORK HABITS AND OF SELF-EXPRESSION

Punctuality

A separate supplemental remedy for turnover is the development of good work habits. This relates particularly to punctuality and regularity. The man who is on time every day is least likely to quit work. His mental attitude becomes fixed in a feeling of responsibility toward his work. But the worker who becomes casual with regard to attendance has taken the first step toward total delinquency. You have only to picture the subconscious mental processes of a man who remains away from work one day needlessly, to appreciate the subtle change of attitude he bears toward his job. To foster good habits, we enumerate such measures as prompt investigation of causes of unexcused absence, strict penalties for tardiness, bonus for regular attendance (one Detroit company for instance paying twenty-five cents a day extra for a month's perfect record) and the establishment of a pay system such as piece work, premium or bonus, which encourages and rewards accuracy, high output and punctuality.

All other remedies for turnover are likely to be chiefly negative or counteractive unless the management encourages self-expression. First, hear complaints. No matter how unwisely or unfairly objections are presented, give men every chance to "knock." Let them come individually by preference. But even if you deprecate grievance committees, never refuse to hear a committee once appointed. Some men satisfy complaints by being allowed to air them, just as some old people desire not so much to be cured of ailments as to have ailments to describe.

It is better, however, to pick up complaints before they become grievances—while they may be still an expression of some form of idealism—and to deal with disquieting aspirations before they become programs. For this purpose shop meetings called by managers, and scheduled to discuss pleasant and hopeful enterprises as well as difficulties, preserve good feeling. Likewise parliamentary leaders who head off taking a vote until the majority will fall their way, or who sense out a needed compromise or recession before it is exacted, a good manager can employ a shop meeting either to approve his suggestions or to applaud his discernment.

But self-expression goes beyond this. It may be interest in work evoked by a suggestion system. If you make it an invariable

practice to acknowledge in writing every proposal in writing, you have a suggestion system. Boxes to receive letters, and prizes, commendation and promotions to reward them, are mere refinements. Then there is the still more exuberant and satisfying form of self-expression which appears in social, athletic and coöperative organization. We are all nearly as ambitious for communal as for financial rewards. You cannot bring five hundred people together in a factory or anywhere else habitually without providing a field for social striving. They crave organization, fun, activity and influence upon one another. You, as managers, can capitalize this tendency to the advantage of your enterprise. You can make your organization a real family, your plant a communal home.

Self-expression is self-rewarding. No life is complete without it and the factory which does not promote it is repressing a vital part of the complete life.

Now, when we reduce turnover of labor we assume certain responsibilities. Building up a permanent working force means securing permanent employes, men and women who stay with us till they grow old, and retire or die. We must, therefore, make their work more completely satisfying. We must make their work a sufficient career. Self-expression is one part of it, and there are other elements in it.

I know of few plants where routine factory work is a sufficient career, but I see no reason why it should not be. Doctors look forward cheerfully to going on being doctors. Lawyers have no difficulty in finding their life work in the law. Other professions are satisfying to those who follow them, and yet such is the nature of factory work at present that it savors a bit of the desire to perpetuate class distinctions to suggest that factory workers content themselves with the prospects of continuing as factory workers. Some wicked agitator has suggested that employers appropriate the motto of a big New York dairyman "Milk from contented cows" as suitable to the aim of managers to keep workers permanently on the job. The way to make that aim worthy is to arrange conditions so that factory work is in itself an agreeable career.

For one thing there must be definite standards of promotion and pay increases. A Detroit factory discovered a workman in its employ who had gone five years on one rate of pay. A Pittsburgh plant till recently was paying three different rates of pay for the same operation under three different names in different departments.

There should be variety of interest, too. The modern subdivision of labor makes a given task a drudgery, monotonous and intellectually stagnant, but it brings with it the possibility of frequent transfers so that, with proper instruction, a man can follow all the steps of a process without great cost to the plant. The Ford Motor Company asks each employe to fill out a card stating the jobs to which he would like to be transferred when it is possible. A company in Rochester encourages employes to fit themselves for more responsible positions and higher earning power, by reimbursing for their outlay those who complete courses of study. The subject of industrial education again hinges upon our discussion at this point, but it is too big to deal with here.

No work is a career, of course, unless it is possible through it to provide for old age. Those plants which succeed in establishing permanent working forces have the inescapable responsibility of providing for the future of all workmen. Group insurance and other forms of life insurance are good, but not sufficient. They do nothing for the workman between his retirement and his death, and serve but poorly even to compose his fears for his family after his death, because nearly every penny of industrial insurance now goes merely to pay funeral expenses.

A pension system helps to bridge the gap between superannuation and death. Any kind of old age pension is good, but we should lean, surely, toward the kind that appears least to be a charity on the part of the company. The income from an investment to which the workman has contributed and which the company has helped him to accumulate is not charity, and has the further merit of leaving an inheritance to the family. Any profit-sharing scheme like the Procter and Gamble plan, which gives the employe a form of stock ownership, has this merit. The most carefully thought out scheme is that of the Baker Manufacturing Company of Evansville, Wisconsin, which provides for a fifteen-year pension after retirement on a partial resale to the company of the stock secured out of profits shared.

These are ambitious plans. The program outlined above is a particular scheme comprising nearly all of the proposals successfully introduced for the attempted solution of the labor problem. Altogether they may not solve it, but incomplete as they may be, they are sufficiently aspiring and they are all that managers can undertake on their own responsibility.

Even if all of these proposals are applicable to most plants, no factory that has so far failed to inaugurate most of these things can hope immediately to get them all going. It will have to go slowly for two reasons, especially. In the first place, it is impossible to apply any new scheme to all employees at once. This is particularly true if, for the expedient to be successful, it must be understood and believed in by the employees. In such a case it must begin with only those who are ready for it. When the Jeffrey Manufacturing Company of Columbus, Ohio, began its building and loan association seven years ago, only eighteen workers out of five hundred who at first expressed interest were sufficiently impressed to make an actual beginning. Now, over a thousand belong to the association and they have over a half million dollars invested. Most good enterprises with workmen have begun in this small way, and no employer should be discouraged by a meager start if the principle at stake is important.

But it is even harder to make an industrial program succeed promptly owing to the difficulty that a plant has in establishing its character with its workmen. It is so even with individuals. We do not easily believe in the permanence of good intentions. We intensely desire to find friends in whom we can trust and who will be as helpful and patient with us ten years from now as today, but experience makes us cautious. Once we are convinced of the unalterable integrity of a friend, there is no gift of adoration too extravagant to lay at his feet.

Workmen have been disappointed too often to be anything but skeptical. They have tested too many mere paper plans for their welfare to place any easy reliance upon new ones. But when a management, by undeviating honesty, determination and good spirit, carries through during a term of years a program of employees' betterment, it cannot fail to win their confidence and friendship.

HOW TO REDUCE LABOR TURNOVER¹

1. Preliminary Measures

- a—Attempt to learn the true cost of turnover in your plant in order to know how much you can afford to spend to eliminate it

¹An outline of the essential part of the scheme pictured by the author in the foregoing article. Note that this scheme is intended to be complete and is therefore impossible of universal application *in toto*.

b—Keep adequate records as means of analysis of sources and causes of turnover

- (1) Historical and statistical record separate for each employe including date of employing or transferring, rates, earnings, bonuses, defective work, complaints by or against man, absence, tardiness, periodic certification of foremen, date of quitting and reasons
- (2) Turnover by departments, by causes, by weeks and months and years, and by classes of skills
- (3) High and low earnings by departments
- (4) Defective work by departments
- (5) Absenteeism and tardiness by departments

2. *Fundamental Remedies*

a—Hire the right men for the jobs

- (1) Work up good application list which is a "prospect file" by vigilant search of sources of supply, by industrial census of your vicinity, by courteous and hospitable treatment of applicants at all times, and by getting a good name for your factory even from men who have quit you
- (2) Using your present work force as a "prospect file," cooperate with agencies for industrial education, supplementing them with apprenticeship training, to build up a system of promotion and transfer
- (3) Secure time to examine new applicants thoroughly by receiving advance notice of need and by using adequate assistance in employment department
- (4) Hire in accordance with written specifications for each job, prepared at leisure, and after due consultation and criticism
- (5) Prepare a definite scheme of direct examination for each type of work, (using as much of the character reading methods as your experience approves)
- (6) Examine physically with view both to general fitness, to suitability for specified job, and to need of later up-building
- (7) Visit homes of desired applicants
- (8) Check up records of previous employments
- (9) Hire only those who can earn an adequate wage

b—Pay an adequate wage

- (1) Study cost of and facilities for decent living for each workman and use results in setting base rates
- (2) Give special study to cases of inefficient workmen, to see if money troubles are affecting them
- (3) Centralize and pay off at discount, debts of overburdened workmen
- (4) Promote mutual aid association
- (5) Establish legal aid bureau
- (6) Pay weekly
- (7) Discourage alcoholism
- (8) Instruct in proper use of income

- (9) Encourage thrift and home-building
- (10) Where special causes for increased living cost obtain, attack them, as by coöperative stores, housing measures, etc.

c—Provide steady work

- (1) Give piece workers steady flow of material during the day, by proper scheduling system
- (2) Regularize production throughout the year to minimize lay-offs and shut-downs
- (3) Abolish the annual physical inventory, in favor of perpetual inventory with continuous checks
- (4) Make repairs promptly and provide a sufficient reserve supply of tools

d—Don't fire hastily

- (1) Check up foremen whose departments show high turnover records through men's quitting
- (2) Don't let foremen discharge at all
- (3) Give unsatisfactory men at least one chance through transfer
- (4) Establish employment committee to review cases of discharge where men appeal
- (5) Establish foremen's club to study ways of getting along with men
- (6) Interview, before paying off, men who quit voluntarily

3. Supplementary Remedies

a—Start new men right

- (1) Make clearly understood agreement as to starting pay and schedule of advances
- (2) Introduce new men to bosses, to fellow-workers, and to physical surroundings, and acquaint with rules and facilities of plant
- (3) Instruct men thoroughly in new task
- (4) Advance money or meal tickets to beginners short of funds
- (5) Help beginners speedily to get on piece or bonus rates

b—Promote physical efficiency

- (1) Establish physical department
- (2) Examine all workmen periodically and provide machinery for following up those found to be defective
- (3) Provide adequate light, heat and ventilation
- (4) Reduce noise, dirt and noxious odors and fumes
- (5) Purify oils, waste and other supplies
- (6) Purify drinking water
- (7) Provide sanitary lockers, wash rooms and toilets
- (8) Insist upon good teeth and good eyes by using, at least on part time, the services of a dentist and an oculist
- (9) Have nurses or doctors visit those kept home by illness
- (10) Provide mid-workday meals at plant
- (11) Provide good tools and fatigue minimizing equipment

- (12) Shorten work-hours while securing fair output
- (13) Provide at least three rest periods during the day
- (14) Arrange for yearly vacations with pay for all employees. This can be on the basis of an efficiency record or punctuality record
- (15) Promote athletics

c—Foster good habits

- (1) Investigate causes of unexcused absence
- (2) Fix strict penalties for tardiness and unexcused absence
- (3) Bonus regular attendance
- (4) Establish pay system that encourages and rewards accuracy, high output and punctuality

d—Give all employees a hearing

- (1) Hear complaints at all times, no matter how put forward
- (2) Hold regular shop meetings by departments and by divisions to hear men's ideas
- (3) Establish system for considering written suggestions from men; and rewarding with commendation, prizes, or promotion, all thought worthy, and acknowledging all such suggestions without exception
- (4) Encourage all forms of self-directed organization, whether of athletic, social, or coöperative enterprises—provided such organization is not subject to orders from persons outside of your plant and contrary to its interests

e—Make work in your plant a sufficient career

- (1) Establish system for granting unasked-for pay increases as deserved
- (2) Discover ambitions of men for future transfers and promotions
- (3) Help train men to new tasks
- (4) Transfer with some liberality
- (5) Encourage men to improve general education by reimbursing for outlay on courses of study as completed

f—Provide for future of all workmen

- (1) Purchase group insurance for all workmen
- (2) Pension disabled or superannuated employes
- (3) Share profits on some form of stock-sharing basis, possibly in lieu of pension scheme

4. *Provocative Remedies*

a—Fire when other methods clearly fail

- (1) Those with chronic social diseases
- (2) Those whose morals menace the high standards of fellow employes
- (3) Those who persist in agitation
- (4) Those who will not quit drinking

b—Submit all such discharges to appeal committee on which employes are represented

THE TABULATING OF LABOR TURNOVER

By E. H. FISH,

Employment Manager, Norton Co., Worcester, Mass.; Chairman, Committee on Labor Turnover of the Boston Employment Managers' Association.

The efforts of this committee to find a reasonable basis for comparison between shops, based on the length of time which men stay on their jobs, developed at the very first a feeling that it was impossible to reduce it to any single figure or percentage.

We felt that the percentage of labor turnover as usually computed and published was being used to some extent as an index of the value of an employment department. If this is so, it puts a premium on a department able to persuade foremen to retain inefficient workers whom his better judgment told him should be laid off or dismissed. In view of these thoughts, we decided at the start that it would be desirable to analyze the causes of leaving as well as the different kinds or conditions of people whom we employed. With this in mind, we evolved sheets (see inserts 1 and 2) in which those who were hired, or those entering the employ of the company, were divided broadly, at first, into the new, the reemployed, and those transferred from other departments. One sheet is prepared for recording the turnover for the entire plant by departments during a chosen period of time, and the other the turnover in a given department for a given month. On each sheet the new and the reemployed are each divided into three classes, those who are experienced, those who are learners and those who are laborers. The division was adopted after considerable discussion in which skilled, unskilled and semi-skilled occupations were discussed, but it was decided that for the purpose of keeping the cost of labor turnover low, it was an advantage to every concern to hire experienced people, regardless of whether their experience was that of the skilled, semi-skilled or unskilled person, because the previous experience with the company, or with similar companies, counts for almost as much in one case as another.

PROBLEMS OF CLASSIFICATION

The classification of learners was adopted because of our feeling that we should face the facts fairly and squarely as to whether we were hiring men whom we expected to train for our own purposes, whether they were men who we suspected had previous experience, or whether we should make a distinction between them and laborers whom we expect to be about equally efficient at the beginning and at the end of their employment. This too gives us an opportunity to present to the managements of our several companies the number, usually large, of employes for whom some kind of training is needed before they become efficient, because by thus showing this considerable number, it probably will be possible to induce them to set aside certain portions of the shop for specific training of new employes. As such men are scattered amongst the general help, the large number usually passes unnoticed. Under the head of those transferred to a given department, the division is made between those transferred for physical reasons, which includes, of course, those transferred because they have been injured in accidents, and those whose physical condition has changed through sickness, or those whose physical condition remains the same, but where the job in the department has changed its nature in such a way that we do not feel the man can safely continue to do the work for which he was originally employed.

Those promoted require no discussion. Those who are transferred from another department, because they have failed in the first, should be kept entirely distinct because, while as a matter of fairness to the individual it is usually desirable to give the failures another opportunity in some other department, the percentage of them who make good should be kept track of, and that cannot be done unless we know the actual number who were transferred under such conditions. It appears to be generally found that a sufficient number of those who fail in one department succeed in another to make it well worth while to hold this second opportunity open at the option of the employment department, but it was not thought that the percentage of those who succeed in the second department is large enough so that it can be said to be universally true that everyone should have a second or a third opportunity.

Under the head of "Transfers on Account of Departmental Fluctuation," we take care of cases where one department finds

TURNOVER

Turnover is the change in personnel brought about by hiring and termination of employment. Many conditions enter into these changes, some of which are beyond the employer's control or influence. Other conditions are largely within the control of the employer and, because of their obvious importance, they demand serious consideration.

Problems relating to personnel are no less vital than problems relating to markets, materials and machinery. Conditions affecting turnover lie at the heart of all personnel problems. Intelligent consideration cannot be given these conditions without knowledge of facts and such knowledge depends upon accurate data.

It is impractical merely to group or express in total percentage all the factors entering into turnover; these factors are irreconcilable. It is of value to know the percent of exits but it is of more value to know the causes of those exits; therefore a detailed analysis of reasons underlying termination of employment becomes valuable.

With the alert in mind and appreciating the necessity of uniform records if future discussions of the problems of turnover are to be of value, the Employment Managers' Association of Boston has adopted this provisional form and method for computing turnover. The Association anticipates its later revision in the light of experience to be secured through its use.

As a convenience and economy to employers this form is printed and carried in stock by the Library Bureau, Boston, Massachusetts.

RECORD OF TURNOVER

DEPARTMENT SUMMARY

ENTRANCES		NUMBER	PER CENT
1	Employed	_____	_____
2	Re-employed	_____	_____
3	Transferred	_____	_____
4	Total Entrances	_____	_____

EXITS		NUMBER	PER CENT
5	Left of Own Accord	_____	_____
6	Discharged	_____	_____
7	Laid-off	_____	_____
8	Transferred	_____	_____
9	Unavoidable	_____	_____
10	Total Exits	_____	_____

Deduct Unavoidable (9)	_____
Balance = Department Turnover	_____

REMARKS :—

[illegible]

To Compute Percentages
DIVIDE TOTALS BY DEPARTMENT AVERAGE for MONTH

itself temporarily out of the normal amount of work through lack of delivery of material, or for any other reasons, and the people employed there must be taken care of in some other department instead of being allowed to drift outside.

THE INFLUENCE OF WORKING CONDITIONS

Under the head of "Exits," broad divisions were made between (1) those who left of their own accord, (2) those who were discharged or dismissed from the employ of the company, (3) those who were laid off, (4) those transferred to other departments, and (5) the exits which were unavoidable by any act which the company might take. Under those who left of their own accord and which should be understood to include only conditions which might be remedied if the company saw fit to do it, we make the three broad divisions of those who left (a) on account of working conditions, (b) on account of location, and (c) for other reasons. Under working conditions we made the subdivisions of those who leave on account of wages, that is, those who were able to or thought they were able to get larger pay, those who leave on account of heavy, wet or dusty conditions, which column might also be used to cover many other conditions such as those due to lead poisoning, etc., those who left on account of ill health, and monotony. Two additional columns are left for specific reasons which may apply only to the shop which is using this form. Probably in almost every concern, the largest number of assignable reasons will be those relating to wages. It was thought that experience might show a certain more or less definite percentage of people leaving on account of their wages which might indicate a danger point and that salaries or wages should be increased. For example, if the turnover due to people leaving the concern on account of wages alone should become more than say 30 or 40 per cent, it might be deemed desirable to consider seriously the question of a general increase of wages in the department affected.

Under the head of "Heavy, Wet or Dusty," etc., of course are included conditions which are oftentimes inherent in the business itself, and which must be faced. Sometimes, however, the fact that we are able to show to the management that a larger percentage of people than they had supposed leave us on account of these reasons, may indicate to them the desirability of spending

considerable sums of money in remedying conditions which they had been inclined to think were of comparatively little importance. Under "Ill Health," are supposed to be included only such cases as are contracted outside of the employment, for such few cases of sickness as come about through the fault of the company itself, or through defects which they might readily remedy, should be classified under "Transfers for Physical Reasons."

"Monotony," is often the cause of people leaving, although it is not always easy to discover this reason from the excuses given by the people themselves, and especially from the excuses given by the foremen. Where it is suspected that work is monotonous care should be taken to draw out the opinion of those who leave.

LIVING CONDITIONS AND THEIR EFFECT

Under the head of "Location," we have made two divisions, one "Due to the Family Moving from Town," which, of course, usually applies to the children or the younger people in the family. We usually consider that if the head of the family is the one who takes the initiative in leaving town that it must be for some other reason, and will be classified under another head; that is, he may be leaving town on account of any of the working conditions which we have already mentioned, or it may be because we have laid him off, and he is only able to secure a position somewhere else.

Under the head of "Housing Conditions," we place the leaving of employes because they are unable to secure the kind of tenements or houses which they desire, or cases which often happen in rush times of their being entirely unable to find accommodations at all. We place this under the avoidable causes, because it is something which concerns have usually in locating their plants out of the center of large cities. The concern may not care to go to the expense of reducing the turnover due to the lack of good transportation or good housing, because it feels it is making more money through some of the other advantages of distance from the center.

A number of blank columns are left here. The only miscellaneous reason which we are giving is "Unknown," which, unfortunately, it seems to be necessary to maintain. It is usually possible to get some reason assigned for every person's leaving, also many times these reasons are such that we doubt them. Therefore

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Problems relating to personnel are no less vital than problems relating to markets, materials and machinery. Conditions affecting turnover lie at the heart of all personnel problems. Intelligent consideration cannot be given these conditions without knowledge of facts and such knowledge depends upon accurate data.

It is impractical merely to group or express in total percentage, all the factors entering into turnover; these factors are irreconcilable. It is of value to know the percent of exits but it is of more value to know the causes of those exits; therefore a detailed analysis of reasons underlying termination of employment becomes valuable.

With the above in mind and appreciating the accuracy of uniform records if future discussions of the problems of turnover are to be of value, the Employment Managers' Association of Boston has adopted this provisional form and method for computing turnover. The Association anticipates its later revision in the light of experience to be secured through its use.

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PLANT SUMMARY

ENTRANCES	NUMBER	PER CENT
1 Employed	_____	_____
2 Re-employed	_____	_____
3 Transferred	_____	_____
4 Total Entrances	_____	_____

EXITS	NUMBER	PER CENT
5 Left of Own Accord	_____	_____
6 Discharged	_____	_____
7 Laid-off	_____	_____
8 Transferred	_____	_____
9 Unavoidable	_____	_____
10 Total Exits	_____	_____

Deduct Transferred and Unavoidable (8 and 9)		_____
Balance = Plant Turnover		_____

REMARKS:—

REPRODUCED BY PERMISSION

[illegible]

To Compute Percentages
DIVIDE TOTALS BY "PLANT AVERAGE PER MONTH"

it seemed desirable to leave a column frankly for those whom we do not wish to assign to any particular cause.

CAUSES OF DISMISSAL

The exits from work on account of dismissal have been classified under the heads of "Careless," the careless man perhaps being the greatest bugbear that we have, although sometimes it is a curable disease. Laziness is our second classification, though as a usual thing it is very hard to distinguish between carelessness and laziness, the results and the symptoms being very much the same. It was, however, thought that there would be men who are exceptionally active whose carelessness is the result of over-enthusiasm, and whose classification falls under the first head rather than the second.

Incompetency is a very common cause of dismissal in these times when men are apt to represent themselves as even more capable than they really are. In a measure, the turnover due to incompetence may be said to reflect somewhat on the employment department who should be sufficiently keen to discover such cases before hiring them. It is certainly a part of their duty to give such people another opportunity if possible by transferring them to some other department, so that we would expect that this column would not be especially large. Under the head of "Unreliable," we would place such men as we considered were actually competent, but through carelessness or laziness were apt to be variable in their actions. Probably not a great many would be classified under this head, as they would most naturally fall under the two heads of "Carelessness" or "Laziness." The column "Liquor," "Trouble Breeders," "Insubordinates" and "Misconduct" probably need no explanation. There are very few places where any of us can afford to keep men who abuse the use of liquors, or those who are in the habit of stirring up trouble with other people. Our general experience with insubordination, however, leads us to feel that there would be very few cases which could be clearly placed under this classification, as most men are willing to subordinate themselves to a foreman's instructions if they are given clearly so the man does not misunderstand them, and if they are given in a proper spirit. Most of the men, who under proper working conditions, are insubordinate may be said to be trouble breeders by nature, and should probably be classed under that heading.

WHY MEN ARE LAID OFF OR TRANSFERRED

Under the sub-heading of "Men Laid Off," we have made the following divisions:

1. To decrease the force, probably made necessary by lack of work, although it might be due to the fact that additional machinery had been installed which required less labor to operate, or because the men already on the job had become more efficient and were able to do the work in a smaller group.
2. Those laid off for physical reasons include those who have become aged in the service of the company, and those who as a result of some sickness, or accident, had become incapacitated. It seems, however, that very few should be placed under this column, as a man who has become incapacitated as a result of the work which he has done seems to be a proper object for further care by the company, either by being placed in some easier, less active job, or by being placed on some sort of a pension roll.

The next column accounts for the laying off of those temporarily employed, which reminds us that under the entrances no division is made between those who are employed for temporary work and those who are not. It is very difficult usually to determine, at the time a man is hired, whether his employment is temporary or not. We may have a gang of fifty men, and we may wish to increase that gang temporarily to seventy-five. In hiring twenty-five new men, we are almost certain that some will prove to be men whom we will wish to keep at the expiration of the time when the work is done for which they are hired, preferring to discharge some of the men who are already on the job as being less capable.

The subheading for men transferred is divided into those transferred for physical reasons, which is covered also in our statement regarding those laid off; for those promoted, which is usually obvious, although promotion at times may appear to be a little vague. Oftentimes, a man asks for a transfer from one department to another which he believes will prove to be a promotion for him, when it seems to us as if it was a demotion. However, we should feel, we think, that anyone who is bettered either mentally, or physically, or pecuniarily, is promoted even though it may not appear to an outsider that the new job is better than the old one.

Those who have failed in one department and are transferred from that department on that account, also, of course, appear in the entrances under the head of those transferred. Departmental fluctuation is supposed to cover the transfers made from time to

time from one department to another, and more especially between departments of the same nature, but, perhaps, in different buildings under different foremen. This would cover such cases as those where a number of people leave one department, and in order to fill the gap others are shifted from other departments to that, possibly temporarily and possibly permanently. Transfers under this heading would not constitute promotions nor indicate that the person transferred is in any sense a failure.

The unavoidable causes are classified among those who are superannuated or pensioned for any other reason, those whose marriage takes them away from the shop or office, and the deaths which are caused by exterior causes, or those due to occupation in the works. We felt there should be this last distinction between the two because exterior causes are not a reflection upon the industry at all, while those coming from the occupational diseases or from accidents should be kept separate so that we might have an index of the dangers of our work.

At the bottom of the sheet, it will be seen that there is provision made for getting the percentage of leaving for each one of a number of different causes. There is first a footing for the total of each individual column. By dividing that total by the average number of employes concerned, we arrive at the percentage leaving for that particular department for that individual reason, and for the time covered by the sheet. Then the next totals are for the totals of the subheadings: that is, the new entrances, the reemployed and transferred, those who left of their own accord, those who were discharged, those who were laid off, those who were transferred and the unavoidable. Then the third set of totals and percentages is for those coming and those leaving, so that if this is applied to the whole plant, the percentage of those leaving over the average number employed will give us the total turnover for the whole plant. On the other hand, the sheet gives us a classification as fine as anyone probably will require, so that a study of these sheets will give a bird's-eye view of the whole condition, and as finely subdivided an opportunity for study as can be wished. The recapitulation of these figures by departments and by plants is provided for, as may be noticed on the back of the two forms.

DETERMINING COST OF TURNOVER OF LABOR

BY BOYD FISHER,

Vice-President, Detroit Executives' Club.

The following tentative proposals for a real cost system for labor turnover are offered for criticism. To date all estimates of the cost of hiring and firing have been mere guess work.

Mr. Magnus Alexander's thoughtful paper on "Personnel and Employment Problems," the only study of the subject, has been of use in making up this system, but one is forced to point out that his method of arriving at cost is more suggestive than authoritative, and was doubtless not intended to be final. He uses the opinions of experienced men, including his own, as a basis for arriving at each element of cost. This procedure might be repeated indefinitely without giving us anything reliable.

To follow the method here proposed will be expensive, but once there have been accumulated reliable statistics on the subject, the process of correction and follow-up will not be costly. Furthermore, the research can well be parcelled out among various plants to render immediate results of value. This, however, should not be mistaken for saying that the extent of each element of cost is the same in various plants. It is probably merely sufficiently the same that if several plants study each feature, the average results will yield an honestly average figure. Each individual plant must determine its own cost to get accurate results for its own guidance, and must expect the cost to vary somewhat from year to year.

Mr. Alexander estimated the cost of hiring a laborer at \$8.50 and an unskilled machine operative at \$73.50. Thus we see that if his figures are correct, a 100 per cent turnover of unskilled machine operative costs as much as an 860 per cent turnover of laborers. This difference in cost warrants our spending money and time to get reliable data. Furthermore, it reveals how inconclusive is the practice of stating turnover merely in percentages which lump together turnover of all grades of workers. A definite knowledge of cost will show us where we ought to place the greatest emphasis in efforts to reduce turnover, and will guide us accurately

in deciding how much to spend on apprentice instruction, welfare work and improved employment methods, and, especially give us knowledge of an employe's increasing usefulness to a concern as a basis for making wage increases for long service.

It should be noted, in connection with the accompanying outline, that no mention is made of the cost of rehiring former employes. This obviously differs from the cost of hiring new men. The cost, however, can be figured for each item precisely as with new employes. Former and new employes should simply be analyzed separately.

DETERMINING COST OF TURNOVER

I. What is meant by "turnover"

1. The average standing pay roll for any given period should be given as basis
2. In case there is a general reduction in the number of positions during the period the percentage of new employes to the average standing pay roll should be taken
3. In case there is an increase in the organization the percentage of quitters to the average standing pay roll should be taken. In the first case the amount by which the number of quitters exceeds the number of new employes accounts for the reduction. In the second case the amount by which the new employes exceeds the quitters accounts for the increase.¹

II. Variables in the cost of turnover

1. Cost varies by classes of skills of employes hired

A. Highly skilled, all-round machinists or master workmen—

- a. Require little instruction
- b. Are easy on machines
- c. Are economical with supplies
- d. Soon reach normal output
- e. Scrap minimum of product

B. Semi-skilled men—"operatives"—who have operated some one or two machines just long enough to make production on those machines—

- a. Require instruction on new jobs
- b. Are harder on machines
- c. Are careless with supplies
- d. Do not soon reach normal output
- e. Have high scrap average

C. Unskilled operatives—

- a. Require still more instruction
- b. Are deadly on machines

¹ *The Annals of the American Academy of Political and Social Science* on "Personnel and Employment Problems," article by R. A. Feiss, p. 51.

- c. Are wasteful of supplies
 - d. May never reach normal output
 - e. Scrap as much as they produce
 - D. Laborers—
 - a. Require little instruction and get less
 - b. Don't use machines
 - c. Can't waste many supplies
 - d. Have short learning periods
 - e. Scrap nothing
 - E. Clerks—
 - a. Require as much instruction as B
 - b. Are about as hard on machines as B
 - c. Use cheaper supplies
 - d. Take as long as B to reach output but cost less per unit
 - e. Use no product and hence waste none
 - f. Have a high factor of expensive errors
2. Cost results will vary according to completeness of analysis. We should consider the following items:
- A. Cost of hiring, the only item which has a tendency to go up with the reduction of turnover because it is the only factor on a "production" basis
 - B. Cost of instruction
 - C. Cost of added wear and tear on equipment operated by green hands
 - D. Cost of reduced production on machines operated by green hands, when payment is not strictly proportional to output
 - E. Cost of excess plant necessary to make up production lost on machines operated by green hands
 - F. Cost of scrap over and above the amount normal for experienced men
- We need not consider reduced sales due to delay in schedules or to spoiled work because they are too difficult to determine; neither should we count danger of strikes due to agitation among new employees, because too occasional. But these things exist and should be considered as showing our other cost estimates as probably conservative.
3. Cost results will vary according to length of time new employees are followed up
- A. Hiring *does not* vary in this way
 - B. Instruction usually is limited to an arbitrary time—two or three days
 - C. The new worker probably requires around three months to get familiar with machine in all respects, although this estimate remains to be proved
 - D. Up to probably four weeks the new employe improves rapidly. It takes him probably six months to "hit his best stride." Not so, however, with laborers
 - E. The excess plant requirement is proportional to reduced production

- F. Excess scrap probably persists for a longer period than reduced production, because most men acquire speed more quickly than accuracy
- G. Waste keeps pace largely with scrap
- 4. Cost varies according to the type and value of the equipment used by new employees, with respect to cost of:
 - A. Hiring—not so
 - B. Instruction—true to large extent
 - C. Wear and tear—to very large extent
 - D. Reduced production—holds true
 - E. Excess plant requirement—especially and chiefly
 - F. Scrap—to some extent
 - G. Waste—to some extent

Among the different classes of employees this variation is significant as follows:

- Class A. This is important because they are likely to use expensive equipment
- Class B. Important for same reason
- Class C. Important
- Class D. Does not hold true of laborers, who use little equipment
- Class E. Holds true in less degree

III. Figuring total costs while taking the above variables into account

1. To figure cost of hiring—itemize:
 - A. Standard cost per employe for physical examination. Spread cost of total number *examined* over total number *hired*
 - B. Membership in employers' associations and other labor bureaus. Spread annual cost over number hired
 - C. Clerical help and all other salaries of employment department. Figure total number of men on "live" record during the year, whether employed or not—subtract the total for average standing pay roll. The ratio of remainder of names to the total on "live" record is proportion of cost of salaries which should be spread over the number of men hired
 This subtraction of a proportion for employees on the pay roll is made in recognition of the fact that there would need to be clerical work of this sort even if there were no hiring done at all
 - D. Cost of advertising, trips out of town for men, office rent, new badges and miscellaneous, divided among number hired
 - E. Cost of printing prorated over number hired according to C

These items do not vary according to length of service or class of skills or types of equipment used.
2. Instruction—itemize:
 - A. Time of foremen spent with new employees
 - B. Time of workmen detailed as instructors for handling machine
 - C. Time of "time study" men acting as occasional instructors for handling work

Figure separately for an average month for each class of skill "A to E."

3. Wear and tear—itemize:

A. Time of maintenance department on machines operated by new employees, minus a constant factor of time for experienced employees. (Obtain this factor by recording for a sufficient period the time of maintenance men spent on the average with a selected group of employees of all lengths of service over one year.)

B. Cost of materials used for repairs on machines operated by new employees, minus a constant factor of material, for all employees. (Obtain as in "A.")

(The above necessitates at least temporary use of job tickets for maintenance men, with space on tickets to indicate time spent with new and old employees.)

C. Breakage and wear on tools, dies and jigs used by new employees, minus a constant factor for experienced employees

D. Constant factor of cost per man for premature depreciation of machinery. This can only be guessed at, but it may be more closely approximated by a genuine research, which would:

- a. Take certain critical machines now worn out
- b. Find out best records of wear from the makers
- c. Compare average wear in given plant, and
- d. Spread the difference over the number of new men who worked on those machines during

e. The actual life of those machines. Once determined by careful studies and compared with the results of other students, this could be made a constant factor for each plant, or each type of machinery, relative to complexity of design. Figure all but the last point for average month for all classes of skills save laborers.

4. Labor cost of reduced production. This cannot be figured exactly but can be approximately by averaging the results obtained by looking at the matter from several points of view. I suggest the following:

A. First alternative—

- a. Determine by time study and standard practice the ideal capacity of each machine and production center in terms of production per hour
- b. In order not to charge up to turnover any loss of production due to defects in scheduling, record the actual man-hours worked on each production center for a given period and thus
- c. Arrive at total ideal output for that number of hours
- d. The difference between this and the actual output is the loss due to turnover and may be
- e. Prorated to the number of men hired for the period. Theoretically, workers have been paid for ideal output. Price this reduced production, therefore, at cost of departments in question of direct and indirect labor. All other items of cost are elsewhere provided for, under "waste," "excess plant," "wear and tear," etc. If a piece price is paid, however, new workers,

like old, being paid only for work actually done, only the cost of indirect labor should be assessed against the labor cost of reduced production. The above method is not strictly true, but if the ideal machine capacity is based upon the observed output of experienced operatives, it will be sufficiently correct.

B. Second alternative—

- a. Select a number of machines worked by new men and an equal number of like machines worked by men over a year in service
- b. Record the production of each group until the total of men reaches the total of old men.
- c. Time required to teach this may be taken as average learning time
- d. Total difference of production during this time may be spread over the number observed and the average taken as the loss for the average man hired
- e. For men dropping out of the groups while under consideration substitute other men with approximately equal production and equal length of service. Separate observations should be taken for each class of skill—A, B, C, and E.

C. Laborers can be figured in about the same way, namely—

- a. Take a set quantity of trucking, etc.
- b. Compare the number of new as against the number of old men required to do this fixed quantity
- c. Drop men as they improve so as to keep output constant
- d. Until number in first gang equals number in old, this gives the learning time for laborers, and the loss of production of average new laborer.

5. Excess plant cost of reduced production

- A. Assume that the plant investment required under present conditions will bear the same ratio to total investment in plant which would be needed if there were no turnover, as the production which would be possible with the present equipment operated by all experienced men would bear to the present actual output. In other words, if your reduced production is 20 per cent, your excess plant required is 20 per cent. This is stated as axiomatic

B. Find present total inventory

C. Figure on the basis of your present loss of production how much less equipment would be necessary without labor turnover

D. The difference may be used as basis for figuring the amounts of—

- a. Interest on capital
- b. Depreciation
- c. Power
- d. Insurance
- e. Rent

*** f. Repairs**

which are due to turnover

E. Figure by shops, as if separate plants, for each class of skill using equipment and spread cost over turnover in those classes

Excess plant cost and labor cost of reduced production should be figured separately and then added together, instead of prorating excess plant cost as a burden on the labor cost of lost production, because the burden is not the same man for man, and department for department. Furthermore, in departments where wages are in proportion to efficiency, "excess plant" costs plus excess supervision constitute the sum lost by slow production.

6. Spoiled Work

- A. Select at random two equal groups of men representing evenly all grades of skill save laborers, one, a group of new employees, the other, of men over one year in service
- B. Compare total scrap losses for each group until approximately even per day period for some time. The point at which it began to be even may be taken as showing the average time required to reach normal scrap record
- C. Subtract total scrap made by old men from total made by new men and divide the difference by the number in a group, to get total scrap per new employee hired

7. Waste—

Figure the same as scrap. The item includes waste of oil, cutting compound, compressed air, etc.

AN ACTUAL ACCOUNT OF WHAT WE HAVE DONE TO REDUCE OUR LABOR TURNOVER

By JOHN M. WILLIAMS,

Secretary, Fayette R. Plumb, Inc., of Philadelphia and St. Louis; President of the Philadelphia Association for the Discussion of Employment Problems.

THE USE OF AN EMPLOYMENT DEPARTMENT

I wish to speak from the standpoint of the average employer of the need of an employment department; and, to make myself entirely clear, I wish to point out conditions as they existed in our factory, and it is safe to presume in the average factory.

First, I want to state that our firm is over sixty years old, and has built up a reputation for making high quality tools during all of that period. This is not intended as an advertising statement, but is to give you some idea of the class of work we do, the problems we must solve, and further, to have you feel that our employees producing such work, must be at least of average intelligence. You will thus understand that the problems we met were not due to the fact that we had a lot of underpaid, ignorant employees. In other words, our problems are about the same as the problems you have in your own factory.

I also want to impress upon you the fact that while we are sixty years old, we are also sixty years young. I am the oldest man in the executive department of our organization and I am not much over forty years old. We have the reputation of being progressive along all lines of executive control and have established a record for efficiency along general factory lines. We have technical graduates who have been employed in our various departments to keep us fully abreast of the times in all branches of research work, especially in the development of steel. We have a cost system in our factory that was installed at the expense of thousands of dollars, and is to my mind the most efficient I have ever seen because it produces results, and presents them to us monthly.

These points are brought out so that you will realize that we are not held back by any "old fog" ideas on the part of our executives, and to bring home to you the appalling fact that in an or-

ganization such as ours, striving to be up-to-date, it has only been within the past few years that we have fully realized what a terrible drain excessive labor turnover makes on the pocketbook of the employer.

COST OF LABOR TURNOVER

We have learned during the past two years from authorities in their line, as to the cost of labor turnover, and I believe the fact is firmly fixed in our minds that there is such a cost, but as the statement of such cost has been so general we are more or less skeptical as to the actual amount involved. I therefore propose to tell you about one of our departments, and will consider only the actual cost to us of bringing a man in off the streets, placing him in a position that is only semi-skilled, in fact, in such a position that with average intelligence a man becomes an effective worker in twelve weeks.

The department in question is run on a piece work basis and we have a plan whereby we pay each workman a day rate, in addition to a piece rate, until such time as he becomes efficient enough to earn a fair week's salary, which in this department is about six weeks, although to reach the full pay of an expert worker takes twelve weeks.

Our basis is as follows:

The first week we pay thirty cents per hour flat.

The second week we pay twenty cents per hour and in addition pay for all production he turns out on the basis of regular piece rates of such production.

The third week we pay fifteen cents per hour on the same basis.

The fourth week we pay twelve cents per hour on the same basis.

The fifth week we pay eight cents per hour on the same basis.

The sixth week we pay five cents per hour on the same basis.

At the end of that time the man should be self-supporting. We credit this man with all work turned out, and yet our records show that such a man costs us, in excess day work charges, the cash sum of \$42. This, however, is only part of the cost, as in this particular department the overhead expense is 130 per cent, or for every dollar we pay in actual productive labor we pay \$1.30 for unproductive expense, such as foremen's wages, instructors' wages, inspectors' wages, power, heat and light, repairs to machinery and fixtures (belts, shafting, benches, frames, etc.), oils, grease and

kindred items and expense materials that have no connection with the actual material in the tools, such as emery, grindstone, files, hand tools, etc.

This brings into the question the loss to any employer, that is not realized, because it does not appear in the pay envelope, but is hidden in the cost of doing business and is assumed to be a necessary evil in the expense of conducting such a business.

This is hard to express in terms of dollars and cents, but from our records I believe I have found a way to make it clear. In this department a skilled employe makes \$24 per week and (on the basis of unproductive factory expense of 130 per cent) it costs \$31.20 additional expense for his production. Our records show that a new man will have an average earning power of only \$10 per week over a period of the first six weeks. For each skilled man who turns out \$24 worth of productive work per week we have an overhead expense of \$31.20 in this department. Now for this \$31.20 we secure from a skilled worker a certain number of pieces of productive work represented by his earnings of \$24 per week. From a new man the average for six weeks is less than one-half the work turned out by a skilled worker, as shown by his average earnings of \$10 per week.

It is not fair to say that this man turning out only \$10 of productive labor will cost us as much in unproductive factory expense as the man who turns out \$24 of productive labor, but there are certain charges that must be assumed, that can properly be figured on the basis of a man charge, rather than a charge to a unit of production.

The only credit the new man would have would be in expense materials, that is, materials such as emery, grindstones and kindred items, where the greater the production the greater the consumption of such expense materials should be. This is based on the assumption that the learner will not use more of such expense materials in proportion than the experienced man, although it is a well-known fact that this is not correct. A learner always uses more expense material per unit of production than an experienced man.

In this department the factory expense materials are 50 per cent of the total factory expense charges, and in our figures we are going to disregard any excess charge for the extra amount of materials used by the inexperienced men. This, however, leaves

us with 50 per cent of the unproductive expense of \$31.20 which we pay for the \$24 production of the experienced man, or \$15.60, which we must charge to the \$10 production of the new man. This charge of \$15.60 covers only such expenses as foremen, instructors' and inspectors' wages, power, heat and light, repairs of all kinds, etc., or such expenses as must be assumed by the man unit no matter what his production is. In other words, it costs as much in such expenses for the \$10 production as it does for the \$24 production.

On the basis of an expense of \$15.60 for a \$10 production the percentage is 156 per cent instead of the 130 per cent we pay for the \$24 production, or a net excess cost to us of 26 per cent, or \$2.60 per week, or for six weeks an excess of \$15.60. During the following six weeks, which complete the twelve weeks we figure are necessary to produce an experienced man, this excess cost becomes less due to increased production, but if we cut it in half it is six weeks at \$1.30, or a total of \$7.80.

These three amounts total an excess cost to us of \$65.40 to break in a new man in this one department. These figures are based on the assumption that every man we hire stays with us long enough to become an experienced man, but our records show that we hire six men for this one job before we obtain one who stays with us long enough to become skilled. If we added to the \$65.40 the actual cost of breaking in and training the five men who do not stay, the final cost to us of replacing an experienced man with a green man, whom we have to train, would be so much higher as to be staggering. As a matter of fact our records of total excess cost in this department, not analyzed as I have done, but taken in bulk and divided by the number of men trained over a given period, show the final cost to us per experienced man to be over \$100.

In this analysis I have purposely left out of consideration all expenses, such as interviewing and hiring men, loss in defective work, and have charged nothing for money invested in equipment which we lose on account of low production. You may not have the same plan of payment, but by taking any plan you have and figuring in all collateral charges, such as we have ignored, you will find that the average of \$40 per man, mentioned by various authorities, is extremely low. This cost is brought out to show you how great the prize is if you can by any method reduce your labor turnover.

WHY WE STARTED AN EMPLOYMENT DEPARTMENT

The work of the Philadelphia Association for the Discussion of Employment Problems opened our eyes to the importance of a better system of hiring and firing men. Our system had been the lack of system used by the average employer. When we needed men, our foremen hired what men they could get through their friends, and the balance were picked up in the early morning from the floaters found at the door of every factory daily, and it is hard to conceive of a more undesirable source of supply. This method is so bad in its results that I do not intend to dwell upon it but will relate actual occurrences that crystallized our ideas as to starting an employment department. We heard one of our foremen interview an applicant one day when our need for men was urgent, and the way he handled him opened our eyes as to the possibilities for evil under such a system.

We had at that time, when labor was plentiful, a scheme of partial remuneration, different from that outlined above. When the foreman appeared on the scene, after the man had been waiting almost an hour, he approached him in a belligerent attitude, with—

“Do you want a job?”

The answer was “yes,” and an inquiry as to the kind of work. This was answered in a monosyllable, and then the applicant asked what the job paid. With no attempt to explain the method of remuneration the applicant was informed that we started men in and they could make fifteen cents an hour but would soon learn and get more money.

The applicant said, “I could not work for fifteen cents an hour.”

The foreman snarled, “Hell! You don’t want work,” and left the applicant standing in the hallway, with a blank look on his face.

At about the same period we advertised for men, and our office was filled daily in the early morning, and when the foremen had grabbed off as many as they needed in point of numbers, they paid no attention to the balance, but would instruct an office boy to tell the applicant that all jobs were filled.

One day we received a letter from a workman who had noticed the advertisement, and wrote relating his experience in answering a previous advertisement from our factory. He stated that he did not want to try it again. He pointed out the fact that he had spent an hour and a half in the early morning to get to the factory

at a cost of twenty cents, a loss of an hour in waiting at the factory, and the fact that he had eventually been dismissed by an office boy with no opportunity to see an executive.

He was exceedingly bitter and deservedly so. We wrote him a personal letter, apologized for such a condition, and promised him it would never occur again to any applicant and I don't believe it ever has. The injustice of such a method, coupled with the ruinous effect it must have on our reputation made such an impression that the whole subject was taken up with the board of directors and it was finally decided to create an employment department.

START OF EMPLOYMENT DEPARTMENT

When we had definitely decided to create this department, we knew that we had to make haste slowly, but that there were certain definite lines of policy that must be laid down at the beginning. The first step was the selection of the heads of the department. We finally decided that it must be in the hands of men with knowledge of our factory processes, men big enough to analyze conditions, and important enough in position to have at all times access to, and the hearty coöperation of, our executives, as we realized that employment problem studies would eventually lead to considerable changes in shop conditions. We finally placed entire charge in the hands of our assistant superintendent, Mr. William D. Plumb, together with our comptroller and cost accountant, Mr. James A. Mellon.

The reason we selected these men was because we figured that the job had two sides. We selected our assistant superintendent because he was constantly in personal touch with the men throughout the factory, was also, through his daily routine, familiar with shop conditions, and in the best of position to investigate complaints at first hand. We selected the head of the cost department as this department was to be linked up with the employment department and was to keep all records necessary to take care of the information needed for a successful solution of our employment problems. The cost department in our organization is cold blooded as to figures, and we wanted them to show what progress we were making in dollars and cents and at the same time act as a check on any proposed expenditure suggested by the employment department that did not promise to bring results in dollars and cents. The question of taking

from the foreman the authority to hire and fire workmen was carefully considered, but not definitely decided in advance, as it seemed such a serious problem.

We finally called a conference of our officers, the new employment managers, whom we had selected, and our two superintendents, to discuss fully all questions connected with the establishment of the department. There was very little discussion as to matters of general policy, until we approached the question of taking the hiring and firing out of the hands of the foremen. Both of our superintendents were opposed to doing this, and while they granted that we could possibly solve the hiring part, they saw great obstacles in the way of taking from the foremen the authority to fire men. The greatest objection was raised on their honest conviction, that taking this authority away, would weaken the foremen in the eyes of the men, and break down all discipline. We argued the matter for some time, raising hypothetical questions of what could happen in a department where it would be necessary for a foreman to exert his authority at once, or lose his hold on his workmen.

All cases were met with logical answers covering all points brought up as far as we could foresee them, and we all finally agreed that the advantages far outweighed the disadvantages, and the employment department was created with the full consent of all concerned. The work of the new department was outlined as follows:

Memorandum, March 30, 1916

1. The employment department is to examine and hire men. Requisitions for men from various departments are to be sent to the employment department by the foremen. From these requisitions the department is to get men to fill positions by advertising or from other sources of supply which it will be necessary for the department to create.

2. The employment manager is to watch the men after they are employed, keeping records of the work, and to see that the employe is brought up to the standard of the department, one thought being that we should adopt an efficiency schedule, and if a man cannot make good in the time set for him he will either be discharged, or, if he shows any adaptability for other work, placed in another department.

3. After some discussion the general thought of the conference was that employes could neither quit nor be discharged without the signature of the employment manager. This would enable the employment manager to find out causes for men leaving, and while he might not be able to retain the men it would

show him our weakness if any exists and enable him to eradicate it with future employes. The signature of the employment manager on the discharge slip of an employe would likewise make foremen more careful as to recommending the discharge of a man without a just cause.

4. The employment department would keep records of absences of employes, general efficiency and all items of this kind bearing on a man's value to the plant. This will be worked out by this department and is entirely in their hands.

5. It was definitely decided that requisitions for employes presented by foremen must be O. K.'d by the superintendent in order to keep him in touch with the general situation.

HOW WE STARTED

We had nothing but an application blank on which to start, and no place except the hallway of the main office to interview applicants, but nevertheless we put the plan into effect at once and notified the foremen of the new procedure. Considering the effect of such a change to the foremen it was accepted with a better spirit than we expected. From the foreman's standpoint he was giving up a great deal more than we perhaps realized. He had been accustomed to an autocratic control of his department and he was rendered homage by his acquaintances through being the man who could place them in positions when he so willed it. Adulation is incense to most men, and they were no exception. Suffice it to say at this point, however, that we have never had any real friction with the foremen on either point.

One of the first benefits we derived was in freeing the foremen from the daily necessity of looking over men they needed at the factory door. Under the old system, the first hour of each morning and the most critical hour from a departmental standpoint, was signalized by the absence of foremen from their departments. The new system automatically changed this, and foremen were free to supervise work in their own departments, rather than lose hours daily in interviewing applicants for work. This has worked out so well in actual practice that I question if we have in our organization today a foreman who would go back to the old method of hiring, and we unquestionably would not. In addition to lost time, which can be more profitably spent in their own work, foremen as a class have not a broad enough viewpoint to select men dispassionately, nor have they the opportunity to select them. Quite often you will find, on account of the foremen, cliques built up within a department

due to nationality, creed or secret societies. This is not always intentional, but is created because the foreman draws from his only source of supply, viz: his own friends and associates.

As to the firing end of the proposition there are many arguments against leaving this power with the foremen, but the following seems to my mind pertinent enough to point out the weakness of the practice: Factory managers check up their foremen on all material they use; watch them to see that the machinery is in good condition and save every penny they can by careful supervision, but when it comes to firing men, they give the foremen full sway, because the potential value of \$50 to \$100 invested in that man is not shown in hard cash and is therefore overlooked.

The employment department found right at the start that they were handicapped by lack of facilities for interviewing applicants, and it was definitely decided that we should build an employment office for the purpose of housing the new department. Their preliminary studies had convinced the managers that valuable space was taken up by lockers and departmental wash-room facilities, so the suggestion was made that we combine with the building for the employment department, a service building for the men, with sanitary lockers for each individual, good wash-room facilities and shower baths. This was done, and the building has been in service since July, 1916, and has undoubtedly had a great moral as well as physical effect on our workmen, in addition to the valuable and much needed space which it has released for greater productive capacity in several departments.

It was soon apparent that it was necessary to keep a system of records of each individual from the time he made his application until the time he left our employ for any reason, and time and study has brought into daily use the forms herewith, which I shall try to make clear to you.

FORMS IN USE

The following are a set of forms which we find necessary to use in our work.

I Requisition for help sent to employment department signed by foreman. On reverse side we have printed a new employee slip, which gives a record of the man sent to fill the requisition.

FORM I

REQUISITION FOR HELP

Always use this form when in need of help and whenever possible notify Employment Department one week ahead.

2.16. 1917

Employment Dept.:

Please employ for Dept. 18 one man age 21 to 40 with the following qualities
Some experience if possible or strong sober man

Kind of work wanted for *Polishing*

Wages to start *New rates*

Chances of advancement *Piece work*

Steady or temporary work *Steady*

When needed *at once*

Signature *John McMullin Dept. 18*

II Application blank. All the questions we ask seem to us pertinent, and the answers give us a line on the applicant's desirability.

FORM II

APPLICATION FOR POSITION

No. 1831

Date 2/24 1917

Name *John Sobritski*

Address *4623 Milnor St.*

Read Eng. No

Married ☒

Age 33 yrs. Wt. 165 lbs. Height 5 ft. 10 ins.

Write No

Single

Speak A little

Last Employed at *Henry Diston & Sons*

Address *Tacony*

How long *6 months*

Why Released *Change of residence.*

LAST 4 PLACES YOU WORKED

Place *Rowlands Spring Shop* How long *1 year* Why Quit *small pay*

Place *Barrett* How long *6 months* Why Quit *dissatisfied*

Place *Germantown Tool Co.* How long *2 months* Why Quit *too far*

Place *Fayette R. Plumb* How long *2 years* Why Quit *to go to Germantown*

Time ☒

Wages Earned *11.50 to 20.00* Piece ☒ Wages Expected *Piece work*

Kind of Work Done *Labor & Polishing*

Kind of Work Desired *Polishing*

Nationality *Polish*

Remarks *Good polisher on edge tools. Quit because we called him for smoking in grinding room.*

III Employes' record card. This gives an analysis of the man's record with us, and is used to make notes for future reference.

FORM III

EMPLOYEES RECORD CARD

Dept. 18

Date 2/24 1917

No. 1831 Name Sobritski, John Age 33

Address 4623 Milnor Street

Nationality Polish Languages Spoken, Eng. A little

Read Eng. No

Write Eng. No

Societies Two

Married ☒

Single

Children 3

Rate per Hr. New Rate

Change of Wages	Date									
	Rate									

Employment ceased 5/17/18

☒ Quit—Layed Off—Discharged

Cause To go to Detroit

Remarks May return. Gave week's notice. Good man—take him back if he comes.

Approved O. K.

Signed W. D. Plumb

Approved

Signed

IV Record card of work done and hours worked.

This card shows not only the kind of work done but the hours worked and the amount earned; in other words, it is a continuous payroll record for each particular man. This is valuable in our work as we are able to assort these cards by classes of work done, and quite often settle disputes as well as use them as a basis of records for the adjustment of wage rates.

In one case we stopped what seemed to be a serious walkout of twelve men, all working on the same kind of tools. They sent a delegation to the employment department with a request for more money, pointing out that the work was hard and that some men could make only \$14 to \$16 per week; that the men who made high wages were exceptionally able workers, and that their pay was not a fair basis for comparison with the average men.

By taking the cards of all the men on this particular work, our employment manager was able to show the delegation that the low wage men were not working full time but were the loafers of the department, and that on the basis of the hours worked they were earning as much per hour as the high wage men on this class of work.

The delegation was so convinced of the fairness of our position that the trouble died before it was born.

FORM IV

NAME *John Sobritski*

Week	Description of Work	Hours W.O.		Reason for being out	Pay	
3/1	<i>Polishing</i>			<i>Moving</i>		
	<i>A. E. Nail 1½</i>			<i>Bonus</i>	<i>Day Rate</i>	
	<i>B. S. Hand 2</i>	<i>30</i>	<i>22½</i>	<i>.37</i>	<i>7.50</i>	
	<i>Engineers</i>					<i>7 50</i>
3/8	<i>Polishing</i>			<i>Bonus</i>	<i>Day Rate</i>	
	<i>A. E. Nail 1½</i>			<i>1.31</i>	<i>10.50</i>	
	<i>" " " 2</i>	<i>52½</i>		<i>Piece 2.65</i>		<i>13 15</i>

V Pass issued to workmen to leave the factory and reasons given. No workman can go out without a pass.

FORM V

Dept. 18	Date 5/12/17	
Name <i>John Sobritski</i>	No. 1831	Reason
<i>Pass out at 10.15 and excuse</i>		<i>Work caught up.</i>
Dept. Head <i>John McMullin</i>	Supt. <i>H. T. Jackson</i>	

FORM VI

VI Slip for a man who is discharged or quits. 'Must be signed by the employment manager.

No. 1831

Date 5/7 1917

Please pay to John Sobritski

Dept. 18

wages for week ending 5/17/18

Dept. Head John McMullin

Left ✓

Discharged .

Cause To go to Detroit to polish auto parts

Empl. Agt. William D. Plumb

This slip must be signed by Employment Agt. if employe is leaving.

SPECIFICATIONS FOR HIRING WORKMEN

While we have not gone far enough to indulge in psychological tests in the selection of workmen, and do not differentiate between blondes and brunettes, we have found it necessary to have certain standards for the use of our employment department, and from our experience we have drafted a partial set of rules and specifications to assist in selecting the right men for each particular job.

These rules are as follows:

HIRING MEN

Be courteous; be patient; remember you have much to do with "labor's" opinion of the factory.

If we have the kind of work the applicant wants, give it to him, provided he is strong enough, does not seem to be a floater and has no infirmity.

If we haven't the kind of work he wants, try to interest him in something that is similar to it.

WHEN HIRING MEN, DO AS FOLLOWS

I Ask them what kind of work they have been doing. If they haven't been doing any work similar to ours, ask them the kind of work they want. If they say *labor*, they are possible for following jobs, provided they come up to the requirements necessary for the several jobs: yard, trucking, grinding, tempering, polishing and heating.

If they ask for something in our line they are ready for application blanks.

II If applicant wants work in which we have no opening, or doesn't want work we have, do not bother with application blank unless he seems especially good.

III Make out, or, if they are able to do it, have applicants make out application blank.

IV If applicant wants work in our line, find out experience or reasons for wanting job.

V If applicant comes up to requirements, explain to him carefully: the job, the pay, the bonus system, the card system, the hours and the fact that he must give a week's notice before leaving to get pay in full, and that we hold back a week's pay. Finally tell him that the employment department is always ready to straighten out any misunderstanding he may have.

FOR GRINDERS THE BEST TO DRAW FROM ARE

Nationality. Polish, Lithuanians or Americans, experienced grinders, or Americans that want to try it after being told that the job is hard work, wet work and that the majority of the men are Polish, but the job pays good money. Ask them if they are ever troubled with their backs or rheumatism.

Physique. Generally strong and big boned. Some small wiry ones make good, but not many of them. Explain: must wear glasses, boots and aprons, which we furnish, for wet grinding, and for which they pay at the rate of \$1 per week.

Forgers in Department 14. Boys for back of press; must be at least eighteen years old, big boned, either American or American Pole. Remember that we want one that can work up to drop hammer.

Heaters. Men over twenty-one years. Used to working in heat. A man that has worked in a rolling mill or any forging shop. Either American or Polish.

Drop or Pressmen. Transfer good heater. No heaters available, get old forgers on foreman's list. No one available, take men over twenty-five with intelligence and strong physique.

Handlers. Americans over twenty-one. Men accustomed to using a hammer preferred, such as carpenter's helper or chipper.

Finishers. Girls sixteen or over. Americans or Italian, former preferred. Some experience in factory work. Neat about clothing, without cheap finery. Better if they are not "flirty" and live at home.

Packers. Americans, experienced packers preferred. In any case must be able to read and write well, must be reasonably neat, enough to show carefulness.

Handle Bellers. Americans or Italian. Eighteen to twenty-five. Strong wrists and quick movers.

There are similar instructions in regard to other classes of employes, but these will be sufficient to show the extent to which we have gone thus far.

WHAT WE HAVE ACCOMPLISHED

When I asked our employment department what they had accomplished the answer was "Not much. We have hardly scratched the surface as yet."

Realizing that they had been in actual working order in their new building only since July, 1916, or a period of eight months, a search of their records hardly bears out such an answer, but when the problems to be solved are so many they evidently feel that what they have done is but a drop in the bucket. I propose to point out some of the things they have accomplished and leave it to your judgment if they are not at least on the way.

1. A BONUS SYSTEM

The employment department found that one of the greatest evils from which we suffered was continued lateness, continued absence, and workmen quitting at the drop of the hat. To discourage these practices, and reward good workmen, they proposed and we adopted a bonus system as follows:

A. A workman receives an additional 5 per cent of his weekly pay providing he turns in a perfect weekly time card as to attendance. Excused only if sent home by foreman, or loses time due to injury incurred at factory.

B. Receives another 5 per cent for maintaining the standard of a good workman. It is assumed that all employes have maintained this standard, unless they are reported to the contrary by their foremen or the superintendents. This is deducted in extreme cases only.

C. While workman is credited with the bonus from the day he starts, he must work three months before he obtains it. If he quits or is discharged before this time he receives no bonus.

D. The bonus is paid by check, and a workman may leave his bonus on deposit with the firm, and receive 6 per cent annually, payable semi-annually.

We now have about forty-one bonus books on deposit. We have greatly improved the conditions, and feel that it has been a wise expenditure, but experience has proved that it needed stiffening and we have added a ruling that seems to be having the desired effect. The ruling is as follows, viz:

"If an employe loses time three weeks in succession except for reasons covered by provided excuses, he forfeits his rights to his entire bonus, until he shows a perfect time card for one week. He is notified that if he continues this delinquency, he is not considered desirable."

By showing delinquents how much they are losing in cold cash, by being late and losing time, they are made to realize that it does not pay.

2. REDUCTION FROM FIFTY-SEVEN AND ONE-HALF TO FIFTY-TWO AND ONE-HALF HOURS

During the period when men were so hard to get we tried to analyze the causes for men either not hiring with us or not staying with us and the employment department made the following report as to one of the contributing causes:

Our work from its very nature is hard and laborious, tiring men out compared with work in the average factory. We figure that in order to hold our men, and make our plant attractive to new men, it is necessary to reduce our week from fifty-seven and one-half hours to fifty-two and one-half hours, with no reduction in pay. We figure that it will not decrease our production, but will raise it.

After some discussion their report was adopted and on December 4, 1916, all day rates were raised so that the pay equalled or slightly bettered on a fifty-two and one-half hour basis the old pay on a fifty-seven and one-half hour basis. All piece rates were carefully analyzed and adjusted in every case where the shorter hours affected the pay of the producers. The results speak for themselves. The men felt better and appreciated our action. It is much easier to hire men than before. The weekly production, in one of our worst departments in spite of the shorter hours, has increased 18.4 per cent and in the entire plant 10 per cent.

3. REFORM WITHIN A DEPARTMENT

One of our departments demanded personal investigation, as we found it impossible to keep men or to maintain production. An analysis by the employment department showed poor shop conditions in many phases.

A. Inadequate artificial lighting at dusk, so bad that no one but the individual workman bent over his work could tell what he was doing. This part of room dark and cheerless.

B. Bad drainage in the rear of the machines, which were fed with water. The water collected in spots. This section of the department had a dank unwholesome smell.

C. The foreman was inefficient, had no control over his men, and therefore none over his department. He wasted most of his

time doing clerical work that he dragged out over almost the entire day. The men who worked under him were as a class heavy drinkers and independent, worked when they wanted to and quit when they wanted to.

The following remedies were suggested and adopted:

A. Improved lighting. One hundred watt mazda lamps were installed every twenty feet.

B. Drain was put in which took care of all excess water, relieving both the discomfort and odor.

C. The foreman was discharged, and a capable man from another department put in his place.

This move stiffened up discipline, and improved the personnel of the department.

D. The entire layout was inspected, safety guards put on all machines where there was any chance of a workman getting injured. Everything possible was done to make the operation of the machines safe and convenient for the men.

E. Two instructors were installed to teach new men.

F. All piece rates were carefully analyzed and prices adjusted so that there were no "good jobs" and "bad jobs." They were all made "fair and square jobs."

Rates were equalized and set so that men could make an average sum per hour on any kind of work done in the department. Since then there have been several adjustments and still a few to make, but we keep in close touch with the work, and "raise before we are compelled to." This is the department that increased production 18.4 per cent with five hours per week less running time, and last month had the largest production in the past three years. This attention to details has already proven it has paid, through the reduction in overhead per unit of production in this department.

4. INTERVIEWS WITH MEN WHO QUIT

As all men are paid off through the employment department, even the men who quit without notice must return to the department to be paid wages due. All others must secure the signature of the employment manager if they give notice or are discharged, so we have a chance to interview all dissatisfied men and some of the results are illuminating.

When men quit or are discharged they have no reason for withholding information. Complaints are heard of nagging foreman, lost time in waiting for work, and other complaints bearing on shop efficiency. Those are investigated, and if the fault is with us it is remedied.

These complaints brought to light the weakness of one of our best foremen. He always had a "chip on his shoulder," approached his men with that attitude and caused a great deal of friction before this fault was discovered. A talk by our superintendent convinced him that while that sort of attitude may have been all right ten years ago, "it can't be done" now. Another man quit, and on being asked for reasons, stated that he had to lose too much time waiting for one indispensable tool, and for material for his work. Likewise was advised that his work was O. K. by one inspector, only to finish it up and have half a day's work thrown back by another inspector. An investigation proved that the man was justified; the case was settled, and the man is still with us. As he was an experienced hand in the department in which I stated it cost us \$100 to "break in" a new man, it looks as though this was a fair day's work.

5. TRANSFERS IN THE FACTORY

This was something never attempted. If a man did not suit his foreman, he was fired and no questions asked. Now we look into unsatisfactory cases, try to find the cause, remedy it if we can, and if we can't, try to locate the unsatisfactory man in another department. We have one young man, of undoubted ability, good personality, pleasant and obliging. He became a regular Monday absentee, took all that was told to him as a reprimand with a lackadaisical air, and had evidently lost his "pep." We found upon investigation that he was fast becoming disgusted with his outlook, and felt that he was up against a blank wall. We transferred him to a semi-executive position in another department, gave him larger responsibilities, and a larger salary, and he has more than made good. Another man was a boss trucker, who made a flat failure of the job. He was then made head inspector of one of our hardest departments, and has done wonders in bringing up the general efficiency of the department. He was temperamentally unfitted for one job, and fitted for the other.

6. ACTUAL ACCOMPLISHMENTS

I will not inflict upon you any details of labor turnover, but will simply point out the reduction in the number of men who quit since the department has been in operation. Taking April, 1916, as a basis, during the month of July, one of our worst months on account of heat, the number of men who quit was reduced 25 per cent. This work has been steadily improving and in January, 1917, the reduction on the same basis was 48 per cent. Since the installation of the employment department, we have decreased our working force 10 per cent, reduced our working time almost 9 per cent, and increased our total shop production 10 per cent.

7. INDIRECT BENEFITS

When we first started the employment department our men looked on it with suspicion, as being another one of the things the boss was trying to put over on them, under the guise of service. This attitude of mind is common, and is no more than is to be expected, because of the past relations of employe and employer. Vanderbilt's phrase, "the public be damned," has been paraphrased over and over again with the "men be damned" and the "boss be damned." Recollect that this feeling has been handed down from father to son, and is bred in the bone. It is the survival of the days when "to the victor belongs the spoils," and "might is right."

We are now on the threshold of better things. Employes know and workmen are learning that their interests are identical. One cannot be prosperous without the other. This, however, is the new viewpoint, and has only made headway within the past ten years, and we cannot expect to wipe out generations of suspicion and misunderstanding over night. Our employment department has adopted as its motto, "put yourself in his place," patiently listens to complaints, and does not make the common error of believing that lack of education actually means lack of knowledge. Workmen do not put their kicks in the purest English, although sometimes they adorn them with the strongest. Our men have learned that the employment department is built for them, that it is a place where they get a square deal, and that they will be treated right on all occasions.

To show you how far we have gone I will cite the way disputes were handled before and have been since the creation of this depart-

ment. Formerly men would stop work in a bunch demanding something, and refuse to return to work until it was granted. In one case they gave us one hour to consider a question involving fifty men in one department, and before we had time to even digest the demand the hour was up and they walked out. Since April, 1916, we have had no strikes and no threats. We have had two requests, and the men have stayed at work until a decision was reached. If our employment department had done nothing but produce this feeling of personal responsibility to each other on the part of the men and on the part of the firm, it would have justified its existence and its cost.

In conclusion I feel that in the study of employment problems we are trying to solve issues ages old, and while the reward is great from the standpoint of efficient factory management the reward is still greater if we can but help to solve the principle of humanity involved, and so insure that coöperation without which we can make no progress, and with which the watchword will be "prosperity for all" and not "prosperity for one."

THE REDUCTION OF LABOR TURNOVER IN THE PLIMPTON PRESS

BY MRS. JANE C. WILLIAMS,

Employment Manager, Plimpton Press, Norwood, Mass.

The manufacturing of books is the business of The Plimpton Press and this industry is divided into three classes of work: type-setting, printing and binding. About seven years ago, the Taylor system of scientific management was introduced, and at the same time, an employment department was established, whose immediate object was to centralize in one department the hiring, disciplining and discharging. As the new system of management by gradual processes effected economics in the cost of production, so the employment department enlarged its scope and in time became responsible for savings in the human cost of this industry.

One of the early results of the improved methods of handling materials, routing, etc., was to show that the plant was overmanned and the number of people employed was reduced from between 800 and 900 to approximately 500. This change took place over a period of three years and was not brought about by discharging. When an employe left, he was not replaced by hiring a new worker, but by transferring from within. The working force at the present time numbers about 500, 300 of whom are men while 200 are women.

The management of The Plimpton Press, realizing that a large part of the workers' lives is spent within the factory, endeavors to make the surroundings acceptable. The work rooms are high and there is no crowding of workers; in fact, more space is allowed to each person than usually is found in offices or class rooms. This fact of ample room, especially around each machine, accounts in large measure, we believe, for the low percentage of accidents. The work rooms are well supplied with windows and these furnish proper light and ventilation. The entire lighting system, both natural and artificial, has been studied by experts, and work benches and machines are so arranged that no eye strain can result to the workers.

The nature of the work is clean and there is an ample force constantly at work to keep the factory clean. This effort meets with

much approbation on the part of the people who readily complain at any omission. The lighting, ventilation and cleaning are a part of the responsibility of the factory nurse.

THE WORK OF THE NURSE

A trained nurse is in charge of the hospital, including an office, a rest room and a surgical room, located in the central part of the factory. Here all accidents and illnesses are cared for. The accidents consist chiefly of minor cuts and bruises, and since these are given proper care at once, the danger from infection is minimized and very little time is lost to the worker because of accident hazards. The book-binding industry, owing to its use of heavy machinery, is not as a whole free from maiming injuries. The low percentage of such injuries which we have experienced in the last eight years, we believe is due to the following causes: proper lighting, ample work space, guarded machinery, care in selection of operators and freedom from hurry.

In addition to the first-aid service, the nurse performs much preventive and educational work in the plant and social service in the community. The personal contact resulting from the various activities of the service department has made it possible to get in touch with home conditions. The visiting of homes was brought about gradually and at first only by the expressed wish of the individual. Now such visits are welcomed and the nurse visits all who are away from work more than one day.

The results of the work of the nurse cannot be overestimated. She has opportunities for closer relations with workers than has any other person. She hears directly and indirectly of dissatisfactions which would not otherwise be known. When her vision is broad, she brings about a sympathy between the viewpoints of the employer and employee.

PROBLEMS DUE TO SEASONAL DEMAND

A large part of the work done by The Plimpton Press is the making of school text-books, and the seasonal character of this work is due to the fact that school boards make their adoptions late in the school year. In consequence, the peak of the production curve occurs during July and August and the lowest point during January and February. This in turn affects the workers, as some reduction

in the force and in the hours of employment is inevitable. Every effort is made by the sales department to counteract this condition by procuring work for the dull season and a measure of success is resulting. Besides this, the following methods have been adopted: every worker is taught several operations so that he may be transferred from one department to another as the work fluctuates; the minimum force is retained as the permanent force; and this force is increased only when absolutely necessary. In this minimum force, there is very little turnover, 81 per cent of the entire number having been in the employ of the The Plimpton Press over five years; 27 per cent, over ten years.

The work hours are from 7:30 to 5:15, or eight and three quarters hours daily, with one hour allowed for lunch, except on Saturdays, when the hours are 7:30 to 11:45, making forty-eight hours per week. This applies to all workers. There is very little overtime and no Sunday or holiday work.

Rest periods of ten minutes morning and afternoon are given to routine workers, such as monotype keyboarders, gold layers and the accounting force, and during this time the windows in these rooms are open. These periods also furnish an opportunity for the worker to take some exercise.

SOURCE AND NATURE OF THE LABOR SUPPLY

The Plimpton Press is located in a community which is able to furnish a large part of the necessary supply of labor. The policy of filling vacancies by promotion within the ranks results in the hiring chiefly of unskilled workers who usually are young. Through friendly relations with the public school officials and teachers, a valuable source of supply for this type of employe is available. Another equally helpful source is found in the present workers who are glad to recommend their friends. In addition, many applicants come of their own accord to apply for work, so that there is a long list of applicants ever available. Under terms of agreement with the trades unions, they have the privilege of supplying workers from among their number, provided they can fill the requirements. If a skilled worker is hired, he usually is obtained in this way.

All candidates for work, except porters, must be English-speaking and have the equivalent of at least a grammar school education.

Each applicant is interviewed by the employment department and asked to fill out an application blank which is kept on file. On the back of this form are later written the impressions of the interviewer and such other information as may indicate the desirability of the applicant. In this interview, an effort is made to make the applicant feel at ease in order that we may judge of the natural person. It is most desirable to know something of his tastes, his natural aptitudes and his ambitions. One of the chief purposes of the interview is to determine the probable attitude of the worker toward the organization. A person is never hired on the day when he first applies for work, as it is desirable to consider the applicant apart from the first appearance which he makes.

In order to get at just the requirements necessary for each job, work is now being done on "job analyses," which means a careful analysis of each particular job in its relation to each particular worker. This includes, besides the time study of the job, a careful study of the home conditions, temperament and age of the worker, all physical surroundings of the workplace, such as air, accessibility to toilets, rest periods, possibilities of sitting, ventilation, light, noise, any nervous strain resulting from the nature of the work, methods of payment, relations of this job to the rest of the organization, and all other features which may make that job different from any other job. This job analysis should show just the proper requirements for the best kind of worker on that particular job, and enable the employment department to choose that individual who will suffer least from working in that particular position, as well as bring the best results in point of production.

The efforts to steady employment by transferring workers from one department to another as work fluctuates necessitate, in making a selection of a worker, the consideration of two factors: first, the adaptability of the worker to the particular job in question; and second, the adaptability to the two or three other jobs at which the applicant may be called upon to work; that is, given two applicants, one especially well adapted to the particular job for which he is being considered, the other, though not so well adapted for that particular job, better fitted for the group of jobs at which he may be required to work during dull periods, the selection would be made of the second worker.

INITIATING A NEW EMPLOYEE

It is the purpose of the employment department when hiring a new worker to tell him something of the general policies and standards. The candidate is then taken to the factory nurse, who questions him in regard to his health and who explains some of the special features of the service department. If the applicant is a girl, she is introduced to the head of the department in which she is to work. She is also taken to her workplace, introduced to those who will become her fellow-workers, given a key to a locker, and told of such other features as may be desirable for her to know. If the person hired is a boy or a man, he is taken to the head of the department, who in turn takes him to his workplace and follows a similar procedure. The first impression made upon the employee is most important, as at no other time is his mind so open.

The group boss in charge of any group of workers, which in practice does not number more than ten, is responsible for all instruction in regard to the work to be taught to the new employee. There are also written instructions relating to the performance of all tasks. Responsibility for all other training and education rests with the employment department. In this field of activity, the aim is to assist the employee in developing his own abilities and in discovering latent capacities if they exist, and to make opportunities for their use in this plant if possible. It sometimes happens that this business does not furnish the best avenues for future growth and in these cases, attempts are made by this department to find the right environment for the worker elsewhere.

The employment department keeps in touch with the newly appointed employees by interviewing them at least once a month to see that they are fitted for their work, are given such assistance as they may need, and to find out how they react to the work. A record is kept of each employee from the time of his employment. Information in regard to age, education, marriage, parentage, nationality, number of dependents and previous employment is obtained from the application blank. Dates of increase in pay, transfer, etc., together with reasons for the same, are entered as they occur. On the back of the sheet, spaces are provided for entries, once every thirteen weeks, for:

(a) An estimate of the excellence or the reverse of the discipline which the worker has maintained;

(b) His efficiency as determined by his bonus earnings in departments where a bonus is paid;

(c) The name of the group boss in consultation with whom the employment manager has formulated his report;

(d) The total number of hours during that period the individual was employed, the hours he was out on his own time, and the bonus hours he made;

(e) His total earnings as shown by the payroll. Space is also provided for items concerning the worker which may affect his work, such as home conditions, etc.

It is with a view to finding out what the average weekly wage per year is for each worker that this record is made, which shall show quarterly the exact amount of money each one has actually taken home during that period. It does not so much matter to the worker what his rate per hour or per week may be. The important thing to him is the amount he earns over a period of time. A man's hourly rate may be high, but if he has short time, his wages are still small. Unless actual figures covering a definite length of time are periodically brought to the attention of someone whose business it is to safeguard the interests of the employe, many maladjustments of wages escape even a well-intentioned management which believes wages are high because rates are so.

It is the custom to consider each employe once at least in every six months to ascertain whether or not he is deserving of an increase in pay, and if he is, it usually is granted. If he is not deserving of an increase, he is interviewed and the reasons for withholding the raise are talked over with him. This increase in pay continues until the rate equals the union scale.

DISCHARGE AND DISCIPLINE

The authority for final discharge rests with the head of the employment department. Group bosses or others in authority may recommend for discharge and, if upon investigation of the case in hand and presentation of proper data on both sides, it seems desirable that the worker be discharged, it devolves upon the employment manager to perform that duty. Individuals may, if they feel that the decision is unfair, take the matter to the works manager, but this privilege has never been used. An employe has the privilege at any time of taking a complaint to the employment department or works manager.

Discipline is reduced to a minimum by the system of manage-

ment which is self-disciplinary in its operation, but such matters as require discipline are usually attended to by the employment manager. A joint committee to consider all grievances brought before it has worked well. This committee consists of a union representative, usually the president of the local union, a representative from the department where the grievance occurs, the works manager, who represents the firm, and the employment manager, who is a neutral party on the committee. A great variety of subjects are brought before this committee, as for example, such questions as certain piece workers doing a little extra work during the noon hour, rearrangement of locker rooms, distribution of work, and similar matters. Questions of pay which are not concerned with union agreements, but merely affect a special piece of work, are also brought up for discussion at these meetings. So far all grievances have been discussed and settled on a basis of facts and to the mutual satisfaction of all parties concerned. The great benefit resulting from these meetings has been the training of the members to look at the various questions from point of fact rather than from tradition or someone's personal opinion. Once facts are established, there is seldom any argument as to the right action.

IMPORTANCE OF MAINTAINING CLOSE CONTACT

Realizing that any group in society advances only as its individual members advance, the employment department endeavors to know each worker individually, and this is brought about not only by direct methods, but by other avenues which it has at its command for getting into close touch with the employees. An important channel is the library, consisting of several hundred books of nearly every description. Fiction is most sought for, of course, but there is a demand for technical books, travels, music, art, etc. Foreigners are often very glad to be shown what kind of books to read, and it is possible frequently to give them almost a graded course. Many of them read philosophy, history, economics, etc., and are grateful for help in the selection of their books. Others of course need a much simpler line of reading, but follow suggestions readily. Technical and trade magazines are sent monthly to those likely to be interested in the special contents.

As a result of observation of the faulty habits of diet prevailing among those who brought lunches, the project of establishing a lunch

room was discussed with a number of the employes. The idea met with such hearty coöperation that three years ago a small lunch room was started. Food is served at cost, and, with the exception of the cook, service is voluntary, being given by members of the office force. Practically no one suffering from indigestion now reports to the hospital in the afternoon.

Recreational activities outside of the factory are not now carried on. Norwood has a civic center of exceptional excellence where gymnasiums, swimming pool, bowling alleys, dance halls, club rooms, sewing and millinery classes, etc., are open to all by the payment of a small fee.

The employes, with the coöperation of the management, have organized two voluntary associations, The Plimpton Savings Bureau and the Plimpton Mutual Benefit Association. The management of both associations is controlled entirely by the employes.

THE OPERATION OF THE SAVINGS BUREAU

The Savings Bureau was founded with the object of promoting thrift among the employes, 80 per cent of whom are members. Annual deposits total usually about \$15,000 and the present balance is \$11,000. A depositor is required to pledge a stipulated weekly amount of from ten cents up, but he may deposit as much more as he chooses any week. Withdrawals may be made at any time. Each department has its own collector and collections are made on the weekly pay day. Interest on deposits is paid at the rate of $4\frac{1}{2}$ per cent per annum. Many people save money for their insurance, rent, other periodic bills, vacations and Christmas in this way. Depositors may borrow sums not exceeding \$100 upon furnishing proper security. Where workers have fallen victims to loan sharks, installment buying, etc., it has been possible in many cases, to make arrangements, by means of weekly deposits in the bank, to pay off these debts. At the same time, the man learns something of thrift in saving for future needs.

As an example of the kind of work that has been done through the bank, the following illustration may be of interest. A man who had been in our employ for a number of years and whose work was proving more and more unsatisfactory, finally had three assignments upon his wages come in almost simultaneously. In taking the matter up with him in an effort to make an arrangement so that he could

obtain releases by paying into our bank a small amount on each one of these assignments weekly, he finally disclosed the condition of his home finances. He was very heavily in debt and was endeavoring to pay on about twenty back bills which covered a term of at least five years. Much of his money had gone foolishly, some of it for liquor and other equally unnecessary expenses, and both he and his wife had reached a hopeless state of mind. We were able to suggest many economies to them and help them make up a budget so that they saved something weekly in the bank for all monthly expenses, such as rent, insurance, and something toward all back bills. In a year's time, he had paid up two-thirds of his indebtedness and his work had improved sufficiently so that he had been given two increases owing to his added value to the business. He is now considered one of the best workers in his department. Although not an habitual drinker, he had been in the habit of celebrating on holidays. The instilled interest in his family affairs and expenses in contrast to his former indifference replaces his need for occasional dissipation.

THE MUTUAL BENEFIT ASSOCIATION

The Plimpton Mutual Benefit Association was organized six years ago to provide a sick and death benefit for its members. It is entirely self-supporting. Each member pays fifty cents monthly and may, upon presentation of a doctor's certificate, receive benefits of \$7.50 per week for thirteen weeks, with a possible additional benefit for thirteen weeks more of \$3.50 per week. In case of death, the beneficiaries receive \$75.

All employees are insured under the Workmen's Compensation Act and each case in which compensation is due is carefully followed up by the nurse to see that full benefit is received. Compensation for accident, other than payment of hospital and doctor's bills, does not begin until two weeks from the date of injury. Realizing that many injuries do not require two weeks' absence and that loss of pay for the first two weeks is often the hardest part of the burden of accident, The Plimpton Press pays full wages for these two weeks to its injured employees when such injuries are not caused by wilfulness. The Press also furnishes at the local hospital a free bed which may be used by employees and their families.

An agency for insuring with the Massachusetts Savings Bank

Life Insurance is maintained. This is a state organization and furnishes insurance at a minimum expense.

METHODS OF PAYMENT

Four methods of payment operate in this plant:

- (1) Salaries: These are paid to the office and administrative force.
- (2) Hourly rate: These are paid to nearly 50 per cent of the entire force.
- (3) Task and bonus: Task and bonus is paid to about 43 per cent of the force. This method consists of a flat wage rate which the worker receives in any case. In addition, a worker is given the opportunity to earn an additional amount by performing satisfactorily a certain fixed task.
- (4) Piece rate.

Weekly rates of pay for women in the bindery working on an hourly or task and bonus basis are from \$6 to \$9.12 plus task bonus, which amounts to from \$1 to \$2. Piece workers average about \$15 for a full week's work. The weekly rates for women in the composition department range from \$6 to \$22. In all departments the range is from \$6 for the younger boys to \$23 for journeymen, according to the operation each performs.

THE PROBLEM OF LABOR TURNOVER

Since 1912, the percentages of the labor turnover have been as follows:

1912.....	.186	1915.....	.13
1913.....	.22	1916.....	.35 (of this, 22
1914.....	.18		per cent was to increase the force
			and 13 per cent to replace losses.

The problems of turnover so far as they affected this establishment had been successfully dealt with until the year 1916. This year presented entirely new problems and efforts to solve them are now being undertaken. A large percentage of the increase in turnover was among the unskilled workers. Among the new aspects the following are most prominent:

(a) The abnormally high rates of wages paid to unskilled labor drew many of this class to the cities and to other plants working on war contracts. We were unable to equal the rates.

(b) The unusual demand for labor made a scarcity of this commodity and as our busy season begins much later than those of other

industries in our locality, the best workers had been engaged before we went into the market. Consequently we were forced to hire a lower grade of help than in former years and they, in many cases, proved undesirable or unstable. There are two possible solutions to this problem—either to retain a larger working force or to increase our force at an earlier date.

(c) In accordance with agreements with the unions, they are given the first opportunity to furnish skilled workmen. This operates well when the union headquarters are in the same locality, but when they are in the city, as is the case with the Typographical and Pressmen's Unions, they furnish unstable force. Workers sent out to small towns naturally return to the city as soon as the opportunity presents itself. This problem brings up the question as to the advisability of training an even greater number of our own employes.

Every industry has problems of employment peculiar to itself, depending in a degree upon the nature of the work, but more especially upon the character of the personnel of the organization. Here innumerable variables enter. Policies which are welcomed by certain classes of society would quickly offend other classes, but in any organization success can come only in the measure of the spirit of coöperation. No class of person likes to be ruled and consequently a democratic internal organization proves to be most satisfactory. On the worker's side, the fact of his having a voice in government increases his self-respect and makes him more ready to take a sporting chance on the results. On the side of the management is the possibility of utilizing the vast fund of experience to be found in the ranks of the workers. Both sides gain the added strength of unity.

THE STANDARDIZATION OF WORKING ESSENTIALS

BY LILLIAN ERSKINE,

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Next to the questions of wage, hour, and the substitution by the management of a spirit of coöperation for the military spirit of command, no factor contributes more to the reduction of the labor turnover than that of sanitary and hygienic working surroundings. Contrary to general belief, these need not be the monopoly of the newly built factory.

While the most recent standards of construction offer many advantages (especially along the line of natural ventilation and economic lighting), nevertheless, by means of mechanical exhaust systems, scientific illumination, and the installation of simple but adequate types of sanitary facilities, practically every handicap imposed by earlier structural defects may be overcome by the progressive employer.

Today there is no reason why the old-fashioned plant should not hope to hold as steady and efficient a force as its "model" competitor. Experience has shown that even the most costly alterations to improve the conditions of working premises eventually pay for themselves in increased efficiency of output, in the steadying of labor, in the reduction of time lost through illness and intemperance, and in a more uniform excellence of production. The employer who allows himself to be discouraged by apparent difficulties from furnishing the minimum hygienic requirements in his plant, must be prepared to compete at a disadvantage with those who (unlike himself) are getting a fair return in work for the wage they pay, from a non-shifting, contented, and physically fit working force.

The physical needs of the worker are no longer subject of speculation. We now know that the immemorial handicap to industrial efficiency is the fallacy that industry profits by gambling with the

limitations of the human body. The unregulated turnover (especially in the unskilled trades) has fostered our reliance on force, (which is measured by hours), rather than on strength, which should, be measured by years. In the skilled trades it has reconciled the American employer to a negative, rather than a positive, standard of health.

But the steady force in the regulated industry can only be made up of men capable of giving service six days out of seven. Moreover, they must give a uniform service that guarantees a steady, rather than a fluctuating, flow of production. And since the effect of the working environment upon the body of his employees is of incalculable importance to the employer, the standardization of hygienic essentials must be ranked by him with the questions of wage and hours, if the wastage of the turnover is to be satisfactorily eliminated from his plant.

GENERAL VENTILATION

Fresh air is the prime requisite for the conservation of physical efficiency. In an eight-hour day the worker breathes from 250 to 350 cubic feet, according to the vigor of his muscular exertion. How basic is the relation between vitality and the normal lung function, may be realized from the fact that respiration during the average workday represents an expenditure of energy expressed by the lifting of seven tons one foot. Whether, during those eight hours, there shall be a normal balance maintained between his expenditure of energy and the recuperative cell-building processes in his body, or a steady depletion of vitality and the accumulation in his system of the poisons of fatigue, depends largely upon the supply of oxygen in the air of the workroom. The body so poisoned is incapable of maintaining a 100 per cent efficiency of output, however desirous of good results its possessor may be. Above all, the body filled with poisons generated by the fatigue of lung-starvation craves a stimulant with increasing insistence at the end of each succeeding day.

Not only should air be reasonably pure, but in order to promote steadiness of output, it should never be allowed to stagnate, however ample the dimensions of the workroom. A lassitude that cannot be conquered, often characterizes departments where air space per capita is so far in excess of ordinary requirements, that systematic ventilation has been judged unnecessary. The forces of the

body may be said to act as secondary lungs; and scientific experiment has proved that these normal functions cannot be satisfactorily performed except under the constant stimulus of an air exchange that avoids extremes of temperature.

Unfortunately, for seven months of the year, reliance cannot be placed on direct ventilation from windows or skylights of the ordinary type. In every department a handful of men will be found who insist on working in an hermetically sealed room. One of the most costly handicaps of modern concrete or other tightly constructed factories is the fact that they are not practically self-ventilating in winter, as was the case with most of their rambling, loose-jointed and unsightly predecessors. The problems of maintaining adequate and draughtless air exchange, therefore, are of importance to the occupier of "model" premises, as well as to the employer in the old-type plant which has outgrown its quarters. And both must choose between the customary slow and costly decline of vitality on the part of their working force during half the year; or between a perpetual struggle to maintain so-called "natural ventilation" in their workrooms, in preference to the equable and reliable air-exchange guaranteed by a standardized mechanical exhaust system.

While an elaborate system of air conditioning may be essential in trade processes demanding absolute freedom from dust and uniform temperature; and while all heat-generating units should be provided with individual exhaust equipment that will remove the heat at its point of origin, the ordinary workroom does not require a costly ventilating installation, or one that calls for high expenditure of fan power for its operation.

The great essential is to maintain a satisfactory balance between the air drawn from the room, and the fresh air admitted to take its place. If the ingress openings be some three times the area of the egress openings; if they be uniformly distributed, and the air admitted be conveyed over warmed steam coils; the problem of a draughtless ventilation during the winter months should be solved to the satisfaction as well as the physical advantage of the workers. It must be borne in mind that the extreme of scientific air-conditioning is rarely popular among those in the shop; and, except in processes where the admission of outer dust or a radical change of temperature is fatal to the product, it is wiser to omit arbitrary pro-

hibition against an occasional opening of windows; even though the perfect operation of the exhaust system may be temporarily hampered thereby. The gradual education of the worker as to the benefits of clean air, and as to the best means of obtaining it in the factory during the cold season, is worth the expenditure of at least as much time on the part of the management, as that everywhere devoted to his education in the care and upkeep of equipment and tools.

In the case of heat-generating units, general ventilation affords no adequate relief to those directly exposed to radiation. A satisfactory type of hood consists of an inner and outer skin, with a free air space of several inches between the two; through which the air of the room is pulled at a velocity of several hundred feet per minute; thereby creating a layer of continually tempered and practically non-conducting air, between the hot inner hood and that next the workroom.

In certain incidental processes where the necessity for draughtless ventilation in limited areas makes mechanical ventilation unsatisfactory, it will be found that the adoption of muslin in lieu of glass in the lower panes of the ordinary window, gives relief from the dead air commonly endured. A medium grade muslin of light color is a better non-conductor of heat than glass. If it be renewed at intervals, it will not prevent a free exchange of air, or lessen the diffusion of light.

In the ventilation of foundries, (once one of the most difficult problems in industry), it has been proved that a type of construction either providing windows the entire length of the side walls of the building, with additional tiers in the roof monitor extending the full length of the structure, or a patented type of construction with an inverted roof-peak, movable side sash, and the standard window lighting area of 40 per cent of the floor space, insures satisfactory removal of smoke and gases; and provides (if vestibule entrances be insisted upon), a reasonably draughtless moulding floor.

It should be noted that the best results are obtained from pivoted monitor windows, (whatever be the industry), when they can be opened at full length; so that they may be changed from a vertical to a horizontal position. This swing through an arc of 90 degrees permits advantage to be taken of the direction of the prevailing wind; so that the strong air currents from the outside may create an upward draught by blowing over and through the monitor

itself, instead of down through the foundry or workroom, thereby counteracting the natural upward tendency of smoke, heat and gases.

DUST REMOVAL

The presence of animal, vegetable, metallic, or mineral dusts in the air of the workroom is a menace to the self-respect and vitality of the worker. When such dusts are, in addition, of a cutting or poisonous character, their hazard is increased a hundredfold.

When it is remembered that at each breath some sixty cubic inches of dust-laden air may be inhaled by a worker, the ultimate injury possible to the twenty square feet of surface of the 500,000,000 air cells of his lungs becomes apparent. In the case of buffers, grinders, and polishers, (before the days of mechanical exhaust protection), the tuberculosis mortality of the group exceeded 60 per cent, in contrast to the normal 14 per cent for the general registration area. Printers, subjected to lead dust and fume, show a consumption mortality in the neighborhood of 70 per cent. Almost as high are the records of potters exposed to flint dust, and of mill workers subjected to clouds of irritating wood dusts.

Aside, however, from questions of health, a dusty workroom inevitably lowers standards of shop discipline and output; induces chronic intemperance, (due to thirst engendered by congestion of the mucous membrane of the throat), and a general sense of physical malaise and depression; and commonly increases friction in personal relations with the foremen, among those whose normal recuperation from physical and nervous fatigue is made impossible by the unsanitary conditions of their working environment. While the direct financial loss involved in the waste of a majority of dusts and fumes in the workrooms is not of serious moment to the management, the indirect losses above noted justify the most rigid precautions for their control.

The secret of successful mechanical exhaust removal of dust and fume from working processes lies in its control at the point of origin. While this was once regarded as impractical in many industries, modern engineering experience has solved practically every working problem, whatever be the specific gravity of the dust or fume in question.

One of the greatest handicaps experienced by the manufacturer has been the vague character of the sanitary requirements in vogue

in different states. The terms "adequate" and "sufficient" have left him free to expend thousands of dollars on experiments, the results of which have too often given little of the protection to the health of the worker promised by irresponsible contractors. The defects in such installations result in most cases from too small trunk lines, thereby increasing skin friction; bad angles, inducing blocking of the pipes; overloaded fans; and poor construction materials.

The usual and inexpert practice in building a dust exhaust system, such as is required for buffing, polishing or grinding wheels, is to proportion the main suction pipe so that at all cross-sectional points it only equals the combined areas of the branch pipes entering the same; while the inlet of the exhauster used on such a system has an area that but equals the combined areas of all the branch pipes used on the system. For example, for twenty-five four-inch branch pipes the largest diameter of main pipe and exhauster would be twenty inches. A fifty-inch exhauster would have an inlet twenty inches in diameter; if it were necessary to get a suction-head at each branch pipe sufficiently strong to displace two inches of water in a pressure gauge (commonly called a U-shaped tube) it would require an actual velocity of 4,000 lineal feet per minute in the branches, and it would be necessary for the exhauster to handle 8,720 cubic feet of air. It would require approximately sixteen horse power to obtain these results.

This kind of a system should no longer be permitted. Standards based on actual working tests and experience prove that efficiency requires for twenty-five four-inch pipes a main pipe with, at all its cross-sectional points, an area 20 per cent larger than the combined areas of branch pipes entering the same. The inlet of the exhauster attached to the system must have an area 20 per cent larger than the combined areas of all branch connections on the system. For example, a system having twenty-five four-inch branch pipes would require an exhauster that has an inlet twenty-two inches in diameter; and the main pipe connected with this exhauster would taper, in accordance with the location of the branches, from the exhauster to the tail of the system. This kind of system would require a fifty-five-inch exhauster having a main pipe twenty-two inches in diameter; and to obtain a suction sufficient to displace two inches of water in a U-shaped tube, the air in each branch pipe would be obliged to have a velocity of 4,000 lineal feet per minute. The

exhauster would handle 8,720 cubic feet of air a minute; and the exhauster would take about twelve horse power to operate it.

While a distinct saving of 25 per cent in horse power is thus gained, this advantage, though important in itself, is greatly enhanced when it is understood that it is practically impossible to obtain a uniform suction in a system where the main duct and the exhauster inlet are based on areas equal to the combined areas of the branch connections.

The fact that a fifty-five-inch exhauster requires less horse power than a fifty-inch exhauster is due to the decreased friction in the twenty-two-inch main pipe, as compared with a twenty-inch main pipe, a decrease of strain which permits a lower speed and pressure. This saving in power should in itself be sufficient to decide the character of a blower installation. It has been demonstrated that blower systems built in accordance with the latter standards are more economical in point of operation, as well as more efficient in caring for dust.

Not only has general faulty construction delayed the achievement of satisfactory dust removal in a large range of industries, but employers have overlooked the fact that unless appropriate material be employed in blower systems, and every detail of construction aid the flow of air generated, desired results cannot be achieved, nor can they be maintained through a reasonable life of the system.

MATERIAL AND CONSTRUCTION DETAILS

All systems, except those handling acid fumes, should be made of galvanized sheet steel. For systems handling acid fumes the base material should be coated with an acid-resisting composition, or be made of tile or earthenware.

Table No. 1¹

Diameter of Pipe	
8" or less.....	No. 24
9" to 16".....	No. 22
17" to 24".....	No. 20
25" to 30".....	No. 18
31" up.....	No. 16

¹ It should be noted that the metal used in Table No. 1 is of lighter weight in accordance with the diameter of the pipe than in Table No. 2. Heavy dusts, that rapidly wear out the resisting surface should be conveyed in accordance with the specifications of the latter.

Table No. 2¹

Diameter of Pipe

8" or less.....	No. 22
9" to 16".....	No. 20
17" to 24".....	No. 18
25" up.....	No. 16

All elbows should be two gauges heavier than the pipe to which they are attached.

Riveting. All straight seams should be riveted with tinned rivets placed on not more than three-inch centers.

All round seams should be riveted as follows:

Diameter of Pipe

4" to 8".....	4 rivets
9" to 12".....	5 rivets
13" to 18".....	6 rivets
19" to 24".....	7 rivets
25" and larger.....	9" centers

Where straight seams are made by means of a "groove or lock seam" riveting will not be necessary.

Soldering. All seams should be soldered air tight and edges coated.

Laps. All piping, etc., should have at least a one-inch lap placed in the direction of the flow of air.

Elbows. All elbows should be made on a radius in the throat of not less than one and one-half times the diameter of the elbow. No internal crimped edges should be used.

Collars. All pipe collars should enter the main pipes at an angle of forty-five degrees, and should be riveted and soldered to the main pipe.

Blast Gate. Every branch pipe should be fitted with a malleable iron blast gate with a slide attached to the gate.

Telescope Slip Joints. All telescope slip joints should be made with a wire edge or band iron. Slip should be two gauges heavier than the outside pipe, and provided with a fastener to hold same in position.

Fan Inlet Connection. At the point where the piping connects with the suction side of the exhaust fan, there should be a detachable sleeve.

Automatic Fire Dampers. Wherever piping passes through a wall or floor or from one building to another, an automatic fire damper should be placed in the wall with blade of damper pointed toward the line of suction, and should be so hung on a fusible link that in case of fire the damper will drop into position and close the pipe.

Dust Separators. All exhaust fans handling dust or waste material should discharge into a dust separator which will separate the dust or material from the air. While it is not practicable to specify any particular dust separator, it is necessary to warn against installing a separator of too small a proportion as the resistance on the fan not only greatly increases the amount of horse power required, but also reduces the suction that should be obtained.

Supports. Separators should be set in structural steel frames and all piping suspended or supported with iron braces. All piping should be braced and supported at least every ten feet.

While in special installations the nature of the dust handled and its specific gravity and quantity may require a greater or less velocity of air, the minimum standard pull required for the average factory process demands that sufficient suction head shall be maintained in each branch pipe within fifteen inches of the hood, to displace two inches of water in a U-shaped tube.²

Aside from variations in the type of hood, and the air velocity required, all mechanical exhaust installations should conform to the standard details enumerated above.

FUME REMOVAL

In the case of processes generating fume, such as pickling, metal dipping in acid or alkali solutions, metal plating, involving cyanide fumes, and a wide range of nitrating operations, a special type of wooden, or metal box-like duct may be satisfactorily employed. This should extend along and above the back of the trough, or tank, or row of crocks; and should incline out and up from its narrow base of seven inches, at an angle of 115 degrees above the rising fumes.

The essentials of construction require that:

I—The main duct should have a cross sectional area at least equal to one-half the combined areas of exhaust openings.

II—The bottom of the main duct should be seven inches wide, and that the front should incline at an angle of 115 degrees to the bottom.

III—The exhaust openings with an area equal to 25 per cent of the area of the liquid giving off the fumes should be located as near the point of origin of the fumes as the nature of the work will permit.

IV—A velocity of air of 1,000 lineal feet per minute should be generated in each exhaust opening.

V—If sheet metal is used in the construction of the duct, an acid resisting paint should be used to prevent corrosion.

VI—The exhaust fan shall be treated with acid resisting paint to prevent corrosion.

In the case of steam removal, or the removal of excess heat, such as exists in a wide range of laundry processes, a type of hood

²Pressure should be taken by pressing the tube attachment over a small opening through the pipe, commonly known as the static method. Tests should always be made with all branches open and unobstructed.

has been evolved which practically encloses the steam or heat-generating unit, and yet permits the operative to retain unobstructed facilities for working.

The presence of humidity in the general air of the workroom, (usually due to localized generation of steam), is now generally recognized as a serious health risk, which invariably lowers vitality and efficiency. It is cause for congratulation that the warm-air method of steam-removal, based on the general mechanical ventilation of the room, has been superseded by the infinitely more satisfactory local type of installation, that catches the emanations before they are diffused.

An individual mechanical exhaust hood of a cabinet type is necessary in a variety of fume-generating processes, such as lacquering and spraying operations. While the specific gravity, or extremely volatile character of the substances employed, may dictate the location of the opening to the exhaust pipe, and the velocity of air-pull required; yet provided that the hood be ample, with a liberal overhang, and that a sufficient quantity of air at a low velocity be moved from the general vicinity of the operative, the air of the workroom should not be contaminated, nor should the health of the worker himself be endangered.

The subtle menace to physical efficiency involved in the employment of some fifty trade poisons in our ordinary industries, demands an absolute and localized control of every variety of their fumes and dust, if the standards of production are to be maintained by a steady force.

LIGHTING

The relation of eye strain to efficiency and general health, is a factor in every branch of employment from the office to the foundry. Glare may be as great a handicap to satisfactory work as the twilight once permitted in the molten metal, and in a variety of other trades.

The standardization of illumination necessary for satisfactory results in a thousand divisions of industrial production, calls for expert knowledge; based not only on the physical limitations of vision, but also on the character of the work handled, and the amount of application involved.

While manufacturing operations such as foundry work, rough

machining, rough assembly and rough bench work, ordinarily require no more illumination intensity than 1.25 to 2.50 foot candles, measured by means of a horizontal reference plane thirty inches above the floor, and a portable photometer or illuminator; fine manufacturing operations, such as fine lathe work, pattern, and tool making, require from four to six foot candles. Whenever natural light falls below these standards, artificial lighting must be employed; and may be roughly reckoned, with a good overhead system, on the basis that one candle power (spherical) per square foot of floor area, will produce an illumination of about three foot candles.

Natural Lighting. The economy of utilizing daylight in manufacturing operations is obvious; but structural handicaps, or the direct glare of sunlight, may offset many of its seeming advantages.

The three essentials of: first, sufficiency; second, continuity; and third, diffusion can only be obtained by the most careful and scientific calculations.

In the case of daylight illumination they are dependent upon (a) adequate window area; (b) means of reducing the intensity of direct sunlight; (c) supplementary lighting equipment for especially dark days and toward the close of winter days; and (d) interior wall and ceiling colorings as light as is practicable, and of a dull finish.

While limits of space forbid technical discussion of standardized methods of artificial lighting, the absolute economy to the employer resulting from the elimination of defective work, and lost time due to unsatisfactory illumination, as well as a reduction of accidents, should encourage the universal adoption of the best methods now obtainable.

Two facts should be especially borne in mind by those handling workers in the finer manufacturing operations. First, that the unshaded spotlight is a direct injury to both eyesight and quality of product; and second, that although hygienic working conditions may be relied upon to improve automatically the health and efficiency of the worker, no lighting, however perfect, can correct congenital or acquired defects of vision. For this reason, a competent oculist should second the work of the illuminating engineer; if the full value of the latter's labors is to be reaped by the employer.

WASHING AND DRESSING FACILITIES

In the conservation of the health and self-respect of the worker, as well as the reduction of intemperance, of shop friction, and of the labor turnover, no factor deserves greater emphasis than proper washing, dressing, lunch-room and sanitary facilities.

The man who leaves the plant unwashed and in his working clothes, (often saturated with sweat), is 80 per cent more liable to respiratory disease during seven months of the year than the worker who has washed up, and changed to street clothing, in a properly heated dressing room. Moreover, whatever the season, the man who starts home under the influence of the stimulus of bodily comfort which follows a bath and change to dry clothes, is much less liable to the temptation that waits behind the swinging doors of the saloon.

It is a mistake to feel that the essentials of hygiene demand the most costly type of installation. While cleanliness and convenience must be insured, a very simple equipment will often serve to revolutionize the general morale of the plant. But if the practice of washing and changing is to become uniform among all employees, no undue loss of time should be involved for the worker, attributable to cramped quarters, and to an inadequate scale of provisions.

The following standardizations are based on tested minimum requirements now in successful operation, and are adapted for a wide range of industries, including those handling large forces and more than one shift.

Washing Facilities. Washing facilities should consist of lavatory basins fitted with waste pipes and two spigots conveying hot and cold water; or troughs of enamel or similar smooth impervious material, fitted with waste pipes, but without plugs; and for every two feet of through-length, two spigots, conveying hot and cold water. Where basins are provided, there should be at least one basin for every five employees; and where troughs are provided, at least two feet of trough length for every five employees.

Where large numbers must be accommodated, especially in trades involving heat and dust, where the worker should strip to the waist in order to wash more thoroughly, a satisfactory substitute for the hot and cold water spigots is a perforated pipe, conveying tempered water, installed above the middle of the trough at a height above the edge of the trough of from eighteen inches to twenty-four inches. Stoppers should be pulled, so that all washing is done in running water; and a trough length of two feet to every five workers is also necessary, as in the case of the spigot installation.

Showers. In plants where the workers are exposed to dust, dirt, the handling of poisonous materials, excessive physical exertion, heat or humidity, efficiency requires the additional provision of shower baths in the proportion of one to every fifteen employes so exposed. These showers should be screened, and should be provided with movable wooden floor gratings and runways. Even in warm weather the chill of cement flooring is both disagreeable and unhygienic; and is largely responsible for the present aversion of the worker to the use of the typical factory shower installation.

Standard Minimum Dressing Room Facilities. Each worker should be provided with a clean place in which to change from street clothes to working clothing. A pipe-rail equipped with clothes hangers, and fastened high enough from the floor so as to prevent the clothes from dragging, may be acceptable; excepting when the workers are:

- (a) Engaged in handling poisonous materials
- (b) Exposed to injurious dust or fumes
- (c) Exposed to excessive heat, humidity, or fatigue from physical exertion

Dressing Room. In such cases clean, lighted, ventilated and, when necessary, heated dressing rooms should be provided; separate from the workroom, but connected therewith. When poisonous materials are handled which expose the person of the worker to contamination, lockers should be provided, divided by perpendicular partitions, of a double type having the following dimensions: sixty inches high by twenty-four inches wide by twelve inches deep.

Single Lockers. Workers exposed to heat, humidity and excessive physical exertion should be provided with single type lockers having the following dimensions: sixty inches high by twelve inches wide by fifteen inches deep.

Much discomfort, and highly unsanitary conditions, may characterize the dressing rooms filled with solid steel lockers. The ideal arrangement is to connect the batteries of lockers with a mechanical exhaust system, which pulls a gentle current of air through their perforated bottoms, and out through the openings at the top. In absence of such ventilating method, however, it is especially essential that metal lockers be provided with perforated bottoms, shelves, and tops; and with fluted or perforated metal doors. The wire-mesh locker, while sanitary, is commonly unpopular with the higher grade employe.

Lunch Rooms. While all workers exposed to dangerous dusts or fumes should be provided with a lunch room, or rooms separate for the sexes, and apart from contaminated workrooms, their value to the employer in the interest of efficiency and the lessening of intemperance, makes their installation desirable in every grade of industry. The cold luncheon eaten in the workroom, is a demoralizing relic of standards long abandoned in other phases of shop organization; and is an anachronism in a plant where the relation of physical fitness to production is recognized.

As in the case of washing facilities, a simple equipment is usually satisfactory; cleanliness, light, warmth and good air are the prime essentials. Gas stoves or

steam tables on which food brought from home may be heated, are always popular; and the furnishing of milk, coffee, tea, soup, or a stew and bread and butter at a nominal charge, is an ultimate economy to the employer.

A word of warning may not be out of place to those who desire to establish a regular cafeteria lunch-room service. Unless the articles of food offered for the relatively hearty meal be of unexceptionable quality, both in material and cooking, the temptation to hurried over-eating will be found a serious handicap to production toward the end of the day. Provided, however, that the food be selected for its nutritive value; that its preparation insures ready digestion; and above all, that an extra time allowance of fifteen minutes be granted when the noon recess is ordinarily of but half an hour's duration, satisfactory improvement in the general health of the force, and a reduction of time lost through illness and intemperance, may be looked for.

Toilet Facilities. These should consist of one siphon action toilet bowl for each twenty persons or fraction thereof. Toilets should be frequently cleaned, well lighted, comfortably heated, and adequately ventilated to the outer air by a window or windows, except in cases where mechanical ventilation is permitted; and in addition, toilets should be separate for the sexes, and provided with vestibule entrances. Urinals, when deemed necessary, should be provided on a basis of one urinal for each fifty persons using same. Urinals should be properly flushed, and so installed as to prevent noxious odors from arising.

The plumbing used for washing and toilet installations should be made in conformity with the local requirements of the city wherein the plant is located. And special emphasis should be laid on the necessity for installing such facilities either under the roof of the main plant, or in buildings connected therewith by means of covered and warmed passageways, so that the exposure of the worker to chill and inclement weather may be eliminated.

Drinking Water. Drinking water should be furnished by means of sanitary bubbling drinking fountains, provided with pipe coils so arranged that they can be ice cooled during the summer months. The fountains should be of a type that prevents contamination from use.

Experience in every variety of industry intensifies the conviction of the fallacy of the belief that employes will either abuse, or fail to take advantage of, the sanitary and hygienic equipments above noted. Shop discipline now demands the same education of the worker along physical lines, which every foreman has long recognized as essential in the case of the actual routine methods of production. For the management of the modern plant to accept failure as the logical result of efforts to improve the efficiency of the human factor, is to accept a handicap which their competitors will overcome; and is to admit an incompetence in the handling of men, which would not be tolerated in the handling of their mechanical equipment.

RECOMMENDED STANDARD PRACTICE ON MEDICAL SUPERVISION IN DETROIT PLANTS¹

The committee presents its report in two parts: first, the results of a personal investigation of Detroit plants; and second, some practical suggestions for building up medical supervision in these plants to a certain standard of efficiency. Both the investigation and constructive policy are divided into three parts: physical examination, sanitation, and health and accident supervision.

From the investigation of these plants we find the following:

The committee personally investigated over thirty plants, ranging from 280 to 42,000 employes. But although various phases of medical supervision are being launched as separate items, there are very few firms that approach what we would call an average standard of efficiency. For this reason our analysis must be more or less vague. There being no accepted standard here in Detroit and the work being frequently under the direction of untrained people, the results of statements made by some firms would not justify our placing the same value on them. But the hopeful part of the situation rests on the fact that except for a few who admittedly are so engrossed in their overwhelming prosperity of production as to be indifferent to the individual care of the operatives, most of the companies are most eager to initiate some adequate system of medical supervision, or bring what they have up to a recognized standard. It is with the hope of helping these that we submit the following.

There are four companies with physical examination on employment and one company with reexaminations which occur and reoccur whenever the results of the first one seem to warrant them. In ten companies rejections of applications are made, mostly for

¹ The Welfare Managers group of the Detroit Executives' Club has recommended as standard practice the following report of a committee of physicians and welfare workers.

Acting with the cooperation of Helen Bacon, secretary of the group, who was formerly employment manager of women of the Western Electric Company of Chicago, this committee made personal studies of the medical departments of over thirty plants before drawing upon their own experience in industry to write the report. Dr. T. H. Mullen, of the C. R. Wilson Body Company, chairman, presented the recommendations of the committee at a meeting of the group on February 7, 1917. Signing them with him were Dr. E. H. Hanna, of the Cadillac Motor Car Company, a member of the National Conference Board of Physicians in Industrial Practice; Dr. W. A. Wilson, president of the Michigan Child Welfare Congress, and P. D. Hall, of the employment department of the Solvay Process Company.

Because of the fact that adequate medical supervision is far from common in industry and in no wise standardized, this report is interesting as an agreement upon principles by authorities in a number of plants.

venereal or skin diseases. Five companies give an age limit, the lowest forty, the highest fifty. One company rejects for any defect, venereal disease, tuberculosis, or over forty years, but allows drinking men. Three companies refuse drinkers. Eleven companies give some test for eye and ear and a few of these are really complete. Fourteen companies make some attempt to fit the man to the job for which he seems physically capable, yet without a physical examination, this is often impossible. One company has a follow-up system to fit or refit the man to the job and some file all applications and follow them up when men are needed.

SANITATION

Fourteen companies have some sort of committee on sanitation, and twenty-one have some sort of supervision of it. Only four companies have what we would consider very good toilets and of these four, only one company has an adequate number. Many have fair ones as far as type goes, but they are entirely inadequate to the number using them.

The same is true of drinking fountains. Some companies have them, and of a good type, but mostly so few in numbers as to make them almost ineffective. Only two approached the standard.

About half have paper towels, two have individual cloth ones, a few have roller towels and the rest none.

The floors are in better condition, some of them being very good and kept in good condition. In one plant where the floors are cement, rubber mats are supplied the men who stand; and from the men's say-so they are very satisfactory.

As to ventilation and lighting supervision, eight are considered good, some fair and the rest poor. Where new buildings are being constructed, this phase is being more carefully considered. One company has meetings of foremen to suggest lighting and ventilation improvements.

It was interesting to find two companies putting in laundries, and in one case the company will also wash the men's overalls.

HEALTH AND ACCIDENT SUPERVISION

On the whole the wash rooms are in only fair condition. In many cases no separate rooms are set apart, and in two cases the men and women wash together. One company has a fine basin and towel rack with individual towels for every ten; and they are put through in squads with plenty of time.

Locker rooms follow in most cases the condition of the wash rooms. Although some have steel lockers instead of the unsanitary wooden ones, only a very few begin to approach the number of employees. One company has a fine building under construction with full drying and ventilation system included.

The restaurants can be said to approach more of a standard, possibly because they must to a certain extent compete with those outside the plants. Some have tables only for the office force; some have separate tables in the same room for office and shop people; and a few have separate rooms or even buildings. One company has its restaurant divided into a serve-self and service sections, allowing office and shop men to use either side. Although the cost of the meal is increased slightly when given with service, many of the shop people prefer it to the serve-self side. Several of these restaurants are operated by outside caterers. Those operated by the plants themselves average a loss of 6 per cent. One company sells tickets on nearby restaurants at less than a single meal costs.

Though several firms maintain baseball, bowling or other athletic teams, only a few have an organized recreation unit; and in almost no instances are even these facilities utilized by the non-English speaking workmen. Yet these employees comprise the largest part of our working force, and have the least chance of securing such activities outside the plant.

Seven companies maintain a Mutual Benefit Society and two companies are considering establishing one.

Ten companies carry on some home investigation but only three of these attempt any educational work as a result of the investigations. In eight cases some visiting nurse work is done, but in most cases inadequate to the whole situation. Two companies are about to put such a system into operation.

With the exception of a very few, the hospital and first-aid rooms are pitifully inadequate or totally missing. Seven companies have paid physicians spending from one hour per day to their entire time at the plant. Others have doctors on call. Three companies have plant hospitals for the men with first-aid attendants. In these plants, drugs are furnished the men for minor ailments other than accidents. Here also advice is given as to physical condition whenever an employe wishes it. Several companies have outside medical contracts with hospital arrangements. Two companies have partial dispensaries. Two have work in first aid and minor treatments at the hands of an insurance company. And below these, medical supervision in some plants drops to the use of the clerical office or the lavatories. Two companies paying bonuses make report of minor injuries at once a condition of receipt of bonus as well as compensation. One company has a small laboratory and a part-time doctor studying occupational diseases. Ten companies put some attention on the care of occupational diseases; but possibly due to the fact that in many cases it is difficult to determine, the progress is not great. However, it is a great deal that this number of employers want to accept the responsibility.

To begin our constructive policy we advocate a physical examination for each new employe—not so much for the sake of rejec-

tion as to determine whether the man is physically fit for the job for which he is hired. If not, the doctor should indicate what jobs he might work at, without increasing any deficiency he may have. If a man's condition would allow him to work efficiently at any one job in a plant, we would not bar him from employment because he might not be fit for other jobs in the same plant. It is a fact that only 15 per cent of accidents and deaths are due to unsafe machines and unsafe places, the largest proportion being due to the unsafe man.

The arguments in favor of physical examination from the employer's standpoint are: (a) protection; (b) production; (c) coöperation.

It is evident why it is a protection to the employer to have the employee examined. Our industrial records will show any number of cases where the employe has attempted by fraudulent means to obtain large sums of money from his employer. For instance, a man injures his eye; examination shows him to be hopelessly blind. The employe says the accident made him blind when in reality he has been blind for months or years. A workman comes into the doctor's office with a swelling in his groin. It is a hernia. The workman says he got it lifting a box of material. We do not believe it, but how can we prove it if the man has not been examined? There are any number of defects which might similarly be uncovered had the man undergone a physical examination when hired.

The physically fit are in themselves much more able to increase the output of a factory or department, but besides that if we know those who are not physically fit, we may be able to place each one at a particular kind of work at which in spite of his defects he can produce as much as his physically fit fellow workman.

That spirit of coöperation is bound to occur where the workman is happy in the thought that in spite of his physical defect he can earn a good fat pay envelope and not accept it in a spirit of charity. Consequently he boosts his work, he boosts his employer and makes himself valuable in many ways.

On the other hand, the arguments from the employes' standpoint are that the employe is infinitely helped by being placed at work which he is physically able to do, and not having his life endangered, if he is suffering with myocarditis, by giving him a position where he is called upon to climb stairs, run lathes, or drill presses. The man with the poor eyesight is not put to work on fine grinding, tool making, etc. On the contrary he is set at work at which he can actually earn as much as his more fortunate brothers. And the fraudulent workman is eliminated from the ranks of the honest workman.

The advantage to a man in finding out his own physical deficiencies—maybe just in their beginning—is invaluable. But in this connection be careful that you make the man understand.

Especially if he is non-English speaking or English speaking but ignorant of the value of prophylactic or medical care, it will be necessary to spend more or less time in making him understand; but it will bring returns that will more than pay for time thus spent. Also, when both employer and employe know his physical status, a man is not going to claim benefits later for a deficiency he acquired previous to his present employment.

The subject of hernia is today causing considerable discussion, especially from a medico-legal standpoint, the standpoint of physical fitness, and finally from the standpoint of compensation.

Hernia is the protrusion of an organ through an abnormal opening of a containing cavity. Personally I lean to the opinion that true hernia (we are now speaking of abdominal and inguinal hernia in particular) is an inherited condition.

How often have we operated so-called recent traumatic hernia and found the sac thick and tough, showing its presence there for years, probably since birth. It is a fact that the courts hold in favor of the patient when the legal aspect is presented. A patient presents himself with an inguinal hernia, claiming it to have been caused by lifting this or that, or stepping a comparatively few inches downward while in your employ. The courts hold, as do most industrial boards, that the man is entitled to the benefits of compensation, when an operation upon the same man shows the hernia sac of the age of a lifetime.

Without fear of proof to the contrary, no man who ever lived, who was born and had reached the age of five to fifteen minutes without the presence of an abnormal opening in his abdominal wall, ever sustained a hernia through any force suddenly applied, no matter how great, unless that force was accompanied by a penetrating wound where the hernia appears.

A sac may exist for years and yet remain empty. When the bowel or omentum enters it from some strain or effort, the parts were long prepared to receive the extruding mass. This extrusion may occur gradually or suddenly. If the latter, the sufferer believes his hernia was formed then and there. But as a matter of fact, the extrusion of bowel or omentum and its entrance into the sac are but the last of a long series of antecedent and preparatory changes. The hernia appears and usually does so during effort. If extraordinary muscular effort is a cause and a sole cause of hernia, why are not all or nearly all of those men engaged in lifting occupations victims of the disease?

Heretofore all applicants who had only half vision were rejected. It is very important to examine both eyes. When an employe who has but one eye suffers the loss of sight of the sound eye, the employer is held under the law for the loss of both eyes. If the eyes appear subnormal in any way, special examination should be given

by an oculist. A general examination of the condition of the teeth should be followed, when necessary, by a detailed examination by a dentist. Eventually it may be worth while to have as part-time officers of the staff an oculist and a dentist.

In this connection we feel that it would be of mutual advantage for the doctor to advise regarding treatment and be allowed to receive the employe as a private case should the man desire it. In this way the doctor will become better acquainted with the condition of the employes and will not become stale as is the fear of the industrial surgeon in handling only one type of work.

The committee has drafted a standard examination record form like the example given.

PHYSICAL EXAMINATION BLANK

.....Company		
Date Hired.....		Date.....
Name.....	Age.....	No.....
Nationalty.....	S.M.W. Trade.....	
General Appearance.....		Children.....
Have you ever had an operation?.....		
What serious accidents or diseases have you had?.....		
R	R	Do you wear glasses?.....
Vision	Hearing	Are you ruptured?.....
L	L	
Signed.....		
Deformities.....	Ht.....	In..... Wt..... Lbs.....
Extremities, varicose veins, flat foot, etc.....		
Blood Pressure.....		Urine S. G.....
Head, including nose, mouth, teeth, throat and neck.....		
Heart, Lungs, Liver. Inguinal Region.....		
Is special examination recommended?.....		If so, for what?.....
Remarks.....		
This man is physically fit for { Any Moderate Only Light } Work (Signed).....		

If this record were used in all Detroit plants we would eventually have some data from which we could build our average manufacturing man, his possibilities and value.

In order to safeguard the interests of the other employes, we consider the following as legitimate causes for rejection: venereal diseases, tuberculosis, skin diseases of a contagious nature, eye diseases of a contagious nature, epilepsy if determinable, and any physical unfitness of non-contagious nature which would incapacitate

the man for the work for which he is hired. A deformity not interfering with efficient production would not be a cause for rejection.

Reëxamination will depend upon the condition at the time of employment, any defects being followed up as often as seem best to the examiner. The responsibility for seeing that stipulated reëxaminations occur, and for sending for reëxamination any other case where a man seems below par, should be definitely placed on each foreman. Then, with consultations between him and the physician on his regular rounds, he should be able to keep a fair gauge on his men. And we even suggest a medical record book for each foreman so that during the shifting and changing, the medical supervision of the men will not suffer. Also, we would demand that all injuries, however slight, be sent to the first-aid room for treatment. This avoids very costly cases of infection. The foreman should be held responsible.

Where firms have rigid pension systems, age limits may seem necessary to safeguard the funds; but otherwise, we do not believe that except as it affects a man's physical fitness for a job any arbitrary age limit should be placed upon an applicant.

If an employe is affected by a disease traceable in its causes to his work or the conditions in a plant, his case should be given special care and he should receive compensation as in the case of accidents.

SANITARY ARRANGEMENTS

The sanitation of a plant should be under the supervision of a committee composed of the safety engineer, plant physician, nurse and welfare worker. The cause of each accident should be investigated by the safety engineer with a view to providing against a recurrence in the future. Frequent cases of sickness from any one section should be traced for a possible cause in the shops themselves. A stated round by the doctor would bring forth cases needing attention and each foreman could assist in making suggestions for better sanitation.

The material available on the subject of factory equipment in washrooms, locker rooms, toilets, drinking fountains, etc., is very limited, that is, such material as we can use for our report. No one seems to have figured these equipments out as to requirements per hundred men except in some very local situations, not at all fitting varied factory needs.

The following suggestions form what we might call the well-equipped plant, as seen by two sanitary engineers, a doctor, two safety engineers, four welfare men, and the suggestions of the manufacturers of sanitary plumbing, and the equipment of recognized leaders in factory completeness.²

²Where cuspidors are needed they should be placed on paper mats twenty inches in diameter and changed daily. Paper lined cuspidors are recommended.

	Lavatories	Toilets	Drinking Fountains	Lockers
Type.....	Individual	All Porcelain. No wood	Bubble type, arranged so lips do not touch metal	Perforated metal, slanting top to pre- vent accumulation of refuse
Located....	In central building near lockers	Substations near workers	Where conven- ient to workers	In central building
Number,...	1 for 15 men	1 to 20 men	1 to 30 men	1 per man. If pos- sible one compart- ment for work and one for shop clothes
Accessories.	Hot and cold water, liq- uid soap, paper towels	Automatic flush		Locked. Forced hot air ventilation to dry wet garments
Plumbing..	Open type, plain			
Special Features	Porcelain	Must have a forced air venti- lation	In clean, light places	It is advisable to ar- range locker so that men coming off work at same time have every second or third locker to prevent crowding
Note	Average time per man at wash basin 2½ minutes	Compartments should not have doors, as easier to keep clean		If lockers are near washbasins, a larger number can use both without waiting

The objection to paper towels, "that we do not get our hands dry enough to prevent chapping" can be done away with by a well ventilated, warm dressing room, where the hands will dry while dressing.

Where there are corners into which waste papers and refuse are thrown this can be largely eliminated by painting these corners white and lighting them well. One does not throw waste into clean corners.

Tile floors should be laid in all washrooms, etc., where possible, otherwise cement well drained. Oily floors should be scraped and swept daily. Where cement floors are used, rubber pads for the men to stand on will help in increasing comfort and efficiency. All

scrap metal should be kept clear of the workers. Many injuries have resulted from this in Detroit plants lately.

Since there is a special committee of the Industrial Welfare Managers' Association on sanitation, we will leave a detailed report on these phases to that committee.

A report on suggestions for forming a mutual aid association has just been completed by that committee of this association and will be mailed this week to each member of the association. About one-third of the poor commission cases of Detroit deal with industrial workers or their families and yet in most of these cases the industry is not responsible. For instance the cases can be roughly divided into: (1) accidents or sickness outside the plant; (2) tuberculosis; (3) desertion; and (4) when compensation has been exhausted. Now help for the first class, at least, would be obtainable from a mutual aid association, and would serve to bring the man back to the factory at the end of his disability instead of his leaving altogether and thus necessitating the breaking in of a new man. Group insurance would also help in this way.

We include good lunch room and recreation facilities among our prophylactic treatment but are leaving to the special committees on these phases, detailed reports of the work.

The following equipment we suggest to maintain an effective first-aid room or plant hospital.

This will depend necessarily on the number of men employed. In one Detroit plant of 8,000 employes, three physicians are kept constantly busy either on inside or outside work. Where a doctor is going to carry on successfully other phases of medical supervision besides emergency accident work, we think his supervision should not range higher than from 2,000 to 3,000 employes.

As to adequate hospital rooms, we consider a unit of 1,400 to 2,000 employes would require three rooms—a reception room, an examining room, a surgery or dressing room.

The furniture needed in a reception room is enough chairs so that patients will not have to stand, and a stretcher. The examining room should have a rest cot, scales and other incidental equipment with two or more booths to facilitate examinations. The surgery room needs an operating table, an instrument case with necessary first-aid instruments, drugs and dressings, one or more pedestal wash basins, and one waste can.

For plants of less size, at least one room, set aside for this purpose only, is absolutely necessary to carry on medical treatment successfully.

To show what nursing service the employes of Detroit manufacturing plants are getting—and without knowing it—we submit the following data.

Out of a total of 378 patients cared for during the month of

December, 1916, by the Visiting Nurse Association, there were 222 cases where the wage-earner was employed by a manufacturing firm.

A survey has just been completed by the Detroit Home Nursing Association of more than 10,000 homes of moderate means, and records were made of 2,000 cases of childbirth, 675 of which were cases where the wage-earner was employed by a manufacturing firm. In 653 cases of the 675 the husband acted as nurse at night; in 158 cases he stayed at home from work from one to four days; in thirty-one cases he stayed at home one week and in four cases two weeks.

The incomes of those 2,000 cases ranged as follows: 48 families received less than \$60.00 per month; 406 families received \$60.00 or less per month; 796 families received \$60.00 to \$100.00 per month; 642 families received \$100.00 to \$150.00 per month; and less than a dozen have incomes over \$150.00 per month. The financial condition of the majority of these families prevents them from securing dispensary treatment, yet is not sufficient to leave much margin for medical care.

Of course this is only scattered service and covers but a small part of what a nurse could accomplish if she were wholly or in part employed by you. An industrial nurse and first-aid man should have the following duties:

1. First-aid and hospital work.
2. Rounds in plant for observation of employees and inspection of shops.
3. Health and hygiene classes or talks to employees.
4. Home visits for nursing sick employees.

There are two organizations which can be made use of if you have no factory nurse or if you want to demonstrate the actual use of such a worker. The Visiting Nurse Association will give trained nursing service at the rate of fifty cents a visit, or will take over the entire nursing responsibility of a plant at the salary of one nurse. The Detroit Home Nursing Association will give practical nursing service at \$10.00 to \$14.00 per week. This service is especially desirable where the woman is incapacitated to the extent of not being able to do her housework, care for the children and get her husband's meals. The service of such a woman would be cheaper than that of the husband if it would otherwise be necessary for him to remain at home.

In this connection let me also state that the Visiting Housekeepers Association will be glad to send workers into any homes to teach the women the economical planning of meals and family expenses. Several firms are now using this as a free agency and one company is paying the salary of a visiting housekeeper so as to have her entire services available for the employees of their plant.

Since you may not feel that your force is large enough to warrant (at least at first) a full-time physician and nurse, we suggest a grouping of small plants so that with a relatively small expense adequate skilled service can be secured. Later on as individual plants become more systematized in this work, it may be desirable to develop a central bureau for examination and employment. In this way much work could be accomplished regarding the turnover of labor and temporary transfers, and a standard of medical supervision developed which would greatly increase individual plant efficiency.

THE WORK AND SERVICE OF THE FACTORY NURSE IN MANUFACTURING PLANTS

BY NATHALIE C. RUDD.¹

While any manufacturer who has established in his plant a welfare service or nursing department (the title is immaterial) will tell you that he "wants to feel that his people are cared for," this is but the expression on his part of the general attitude of managers nowadays that they wish to get at the mind of the people—to learn the underlying causes of industrial dissatisfaction. It seldom shows a knowledge of real conditions and needs. They have come to realize that a better mutual understanding must come about between employer and employe.

I think that the nurse, perhaps better than any other woman worker, placed in the midst of a body of working people, can offer the keynote for the betterment of conditions and the furtherance of harmony.

Hospital training alone will not have given a woman the ability to serve in this capacity; but where that vast opportunity for studying human nature at its frailest has been used to widen the sympathies—to "get the response" from all classes and conditions of people; and where it is added to a natural democratic spirit, an appreciation of the business viewpoint and an executive ability (in fact, the right personality) the nurse in her professional capacity has a wide sphere of usefulness before her in industry. Her qualifications might be tabulated as follows:

- a. Has human sympathy and wins confidence
- b. Has help to offer by remedies or advice
- c. Has learned the value and dignity of work
- d. Knows the necessity of cheerfulness, unselfishness and enthusiasm in daily intercourse
- e. Is accustomed to look for symptoms as a means of diagnosis, and naturally uses this faculty in looking for causes that have produced certain effects

¹For five years engaged in starting work of this character at The Plimpton Press, Norwood, Mass.

A SCHEDULE OF WORK VALUABLE

I believe that every nurse now engaged in industrial work was attracted by the thought of a new and great field of service, where wonderful reforms could be achieved. Where she has failed or lost courage it has been due to one of two reasons—either because the lure of the easier hours and the steadier salary than that accompanying general nurses' work has sapped her enthusiasms and weakened her efforts; or because the problems arising in the industrial world were so many, so conflicting, so apparently without solution, that she felt her work was without effect, and allowed it to become so. For the former class there is nothing to say. To the latter I would recommend the conscientious following of an outline or schedule of work: not for the checking up of achievements, but because in the following of such an outline one loses the feverish unrest which comes in trying to grasp the whole of the problem at once, and finds that the daily round of work, faithfully performed and studied, furnishes a mass of data—a knowledge of conditions and needs, which leads directly to results.

Outline

- 1 Treatment Room Work
Methods: Few drugs. Show personal interest in every case. Instruction proper medical and surgical care
- 2 Visits throughout factory, covering every department frequently
 - a. Follow-up on cases seen in treatment room
 - b. Detection of incipient troubles
 - c. Ventilation—cleaning—safety
 - d. Orderliness and sanitation in toilets, lockers, etc.
 - e. (Most important) General effect—"On the Job"
- 3 Calls on sick or absentees
Not as spy, but as friend, a spirit always welcomed
- 4 Coöperation with doctors, clergy and outside interested parties
- 5 Help or advice in family troubles—medical, moral, social
- 6 Development of work in interest of employees: bank, library, lunch room, newspaper, benefit association
- 7 Outside social work in small groups
- 8 Coöperation in any work for civic betterment

Following such an outline furnishes plenty of occupation; occupation leads to a quiet mind; and it is only the quiet mind that can achieve. What use is to be made of all the various phases of human needs and peculiarities noted? Out of the knowledge and experi-

ence of the nurse, seeing the people in this new relationship, should come some valuable contributions towards the establishment of the much desired harmony. It seems to me that in looking for causes of disharmony our investigators are usually looking too far or too high. The causes of tremendous troubles are often very little things. Whole departments are upset by the ill-temper or arbitrary actions of one person—some little lack of consideration—perhaps partly justifiable. This is where the nurse fits in. She stands as the friend of the people; she sees things with their eyes; and then, because of her broader training and experience, and her wider viewpoint, she can often locate the festering spot that is the underlying cause of disturbance. She will stumble into things that show a great unfilled want in the lives of the people—things which may lead to the development of schemes to fill these needs—schemes bringing the employer and employe together and out of the development of which, greater mutual understanding is evolved.

THE DETAILS OF A DAY'S ROUTINE

Let us follow this outline a little way. The employes visiting the treatment room may number ten or one hundred a day (if the latter, the nurse needs an assistant from the start). Many of these cases will be minor accidents or infections. There may or may not be work to do in the investigation of the cause of the accident. It may be due to gross carelessness on the part of the injured person; it may be due to the nervousness produced by the over-arduous "boss"; it may be due to another's carelessness in leaving utensils in the way; it may be a defect in machinery. There, at any rate, is something to do in the line of instructions for proper surgical care—explanation of methods used—a little correction of the prevalent ideas as to the value of cobwebs or onions for surgical dressings. Some of our patients may have chronic disorders of stomach or head and seek a daily remedy. Such troubles may frequently be traced to neglected teeth, to eye strain, or to atrocious habits of diet, and it will take a long time to break down some of the traditions found in different industries and convince a man of the value of modern medical science. One has at times the worker who craves a stimulant to enable him to perform his task, and investigation shows a home condition that makes a night's rest impossible. I have had one employer, about to start elaborate "welfare work," say to me, "I don't

care anything about a man's sick babies or his outside affairs, I just want him well and happy here." That statement will not bear analysis, because it is doubtful if a man can be well and happy at his work if there are sick babies at home. And the nurse who follows every clue to a sick baby or other home conditions that affect the worker in the factory is fulfilling her highest obligation to her employer in his quest for well and happy employees.

The same thing applies to the hysterical or frequently ailing girl. Tragic things may be discovered in the life of the listless, uninterested factory girl. It is only fair to the management as well as humane to the girl to investigate these conditions, for the employer in the eyes of the world is usually bearing the blame. It is not enough even to locate the cause of the pallor and listlessness in the all-night dance. The good work is not ended until healthier pleasures and rational living are substituted; and it has been proven that the average girl can be made to see this from the health and the business standpoint. It was the frequent discovery of this condition in my recent work which led to the organization of a girls' club which met this need in the lives of over a hundred girls, and which furthermore taught them the principles of democracy, self-support and self-government. Does a girls' club seem remote from the employer's purpose in establishing a nurse in his factory? There is really a very close connection. More than one girl said in relation to her enjoyment of the club, "I have so much more to think about now. I can work better and the day goes faster." The day that goes fast is never a day of loafing.

The daily visits throughout the factory are a very essential feature of the work. Apart from the purpose of these trips as tabulated, they are absolutely necessary in order to produce a fellow-feeling. I do not know that the day will come when the man who sits in his office and wears his coat and his collar will cease to be an object of apparent disdain but real envy, among those honest people who labor with their hands. The nurse should early recognize this and let nothing interfere with a routine inspection of factory and workers. The management should grant this privilege and should give frequent opportunities for conferences with the nurse in relation to her findings or recommendations as to better sanitation or working conditions. Here, too, the nurse should be on her guard lest her suggestions lose force through a too strictly professional interpreta-

tion of hygiene. One cannot demand hospital standards of asepsis in a factory—nor is it at all necessary.

The nurse's attitude in the factory should be one of sympathy and interest, but she should always feel and give others the feeling that her highest duty to worker as well as to manager is to set a standard of better conditions—better health, and through these, to greater efficiency and value. This does not mean eliminating the weak in favor of the strong; neither on the other hand does it mean coddling the inefficient worker and concealing, because of a false standard of kindness, defects that must lead to incompetence. The nurse who accepts industrial work must accept it in its true meaning. She is not engaged to run an out-patient department for the handicapped. Her work is to develop high standards of health as a part of business efficiency, to see that all conditions are conducive to effecting this standard, and to inspire those for whom she is working with a zeal for these principles. It is astonishing to see how quickly the former habits of thought among the workers melt away when one labors in their midst, upheld by ideals of cleanliness of person, orderliness of rooms, courtesy of manner to each and every call, and a cheerful enduring energy, and love of work.

EQUIPMENT OF THE NURSE'S DEPARTMENT

The nurse's department should be located if possible in a part of the plant free from the jar of machinery, where good cross-ventilation is possible. She should have a private office for consultations or conferences with any who want to see her. There should be a separate room for treatments, the size of this directly varying with the number of employees and the hazard of the occupation. Hot and cold running water should be in this room and there should be space for a couch where an injured person could be placed. The rest room should be quite separate from these rooms. It should have one or two couches, preferably rattan, and the walls should be tinted in some quiet tone that is not glaring. It should not be overfurnished, unless it is intended for use as a recreation room, when cushions, books, pictures and rugs may well be utilized. Having in mind a room strictly for the care of the sick I would recommend the simplest furnishings, suggesting repose in every way.

In the equipment of a treatment room it is surprising how little is required, apart from the few surgical instruments necessary in

case of accident or infection and the antiseptic solutions needed in this kind of work. The use of medicines is to be tabooed as much as possible. The morbid craving of the people at large for drugs as a relief to symptoms is certainly not to be encouraged by the nurse who is working for public health, and who knows that healthy recreation, better air in factory and at home, digestible food, proper rest and relaxation of nervous strain, are the things the people need, and that if drugs *could* bring about the desired result it would be wrong to recommend them. Another thing that the nurse must guard against is the tendency of the people to discuss sickness and past operations. Let her watchword be health and not sickness, and she will have a much better and quicker response to her efforts.

While it is not possible for the nurse to be always present in her rooms, if devoting time to outside calls and factory inspection as well, she should make provision for the care of accident or illness by giving training in first aid to some available person in the factory and her emergency and rest rooms should be open at all times.

The calls on sick or absent employes will always lead to a feeling of personal interest, if rightly handled; in fact very soon it will be regarded as an affront not to receive a call from the nurse if absent from work. She will find it essential to have friendly relations with the local physicians and clergymen and all relief and charitable organizations. The details of family troubles cannot all be handled by the nurse, but through coöperation with other agencies much can be effected.

The greater the expectation of the ultimate benefit of this work, the slower must be the initial steps. All the welfare features in a factory should be the outgrowth of the people's obvious needs and should be developed *with* the people. It is only in this way that they can succeed. I have seen mahogany furnished, expensively equipped libraries unused. In my own work, a little library of eight hundred volumes was patronized by two hundred readers, and the coming and going daily was a pleasant feature of the personal intercourse between departments.

STARTING A SAVINGS BUREAU

The development of a savings bureau was undertaken with the knowledge of two existing conditions. First, we knew that money was not wisely handled by our people, that it was chiefly a hand-to-

mouth policy that governed their expenditures, with no provision for the rainy day. We also know that a few of the more thrifty-minded were saving when possible, placing this money with some trusted fellow-worker, whose bookkeeping was of a primitive order, memory playing a large part in the management of these funds. This was so obviously unsafe and yet had so much of good in it that we utilized these trusted people as a part of the force in the savings bureau, all moneys being collected by them in their several departments and turned in to the treasurer, who was elected by vote of the people. We followed the habit already established in connection with their own savings plan, and savings bureau collections were made in the wake of the paymaster—obviously the psychic moment. Withdrawals might be made at any time, within twenty-four hours' notice to the treasurer. Interest was computed semi-annually at $4\frac{1}{2}$ per cent. A loan department was developed in connection with the savings bureau, where money could be borrowed to the extent of the weekly salary, or larger amounts by giving collateral, the rate of interest being low. This was not intended to encourage the man who always lived ahead of his earnings, and the purpose of the loan had to be confided to some member of the loan committee. It was almost the invariable fact that the money so borrowed gave help that could not have been secured in any other way, in times of expensive illness at home, or when mortgage interest or taxes came due, or for the larger buying of winter fuel or supplies which enables the man with means to live so much more cheaply than his poorer brother.

When making the loan the borrower gave his written promise to make weekly deposits into the bureau until the sum borrowed, plus interest, should be accumulated. The entire transaction was on a business basis, and one could almost see self-respect grow as a man finally withdrew from his savings in the bureau the sum equal to his note and interest, and realized that without loss of dignity he had accomplished his ambitions and was clear from debt. The savings bureau apparently met another need. Before its start it was customary to hear from our girls, when vacation time was allotted, the rather bitter remark that a vacation without money did not mean much. This complaint entirely ceased; they all had money; it became the habit to save first, and it was almost without exception, on the withdrawal of money for whatever purpose, that the

statement was made, entirely unsolicited, "I would not have a cent of this money if it were not for this bank." At the close of the first year the total deposits for the year were approximately \$5,000. At the close of the fourth year, with some four hundred depositors, the figure reached nearly \$15,000, no one depositor having more than \$500, interest being paid at the prevailing rate. The company agreed to use the savings bureau money, to the extent of \$5,000, paying 5 per cent interest. Beyond this (apart from the money out on loans) it was invested by the executive board of the bureau.

ADVANTAGES OF A LUNCH ROOM

Whatever may be the response of a group of employes to certain features of welfare work, there is no question as to their response to the thought of a lunch room. If it be clean and attractive, if it serves good and plentiful food at reasonable prices, it will soon prove its need and there is no better means of reaching to the heart of the people (the avenue of the stomach has always been acknowledged as the straight road). The reasons for this particular development in our plant were: first, that one hundred people were eating cold lunches at noon; half as many more were taking a twenty-five minute walk to their homes for the purpose of getting a hot meal, which they had just ten minutes to eat. Numerous cases of after-lunch indigestion were due to this long hurried walk to and from home, which in the hot weather was extremely exhausting. The lunch room was planned with particular reference to serving an accessory to the lunch brought from home—a hot soup or cup of coffee, an attractive dessert or ice cream. A whole meal could be obtained, but the plan was not to entice people to spend their money; rather to make possible a nourishing noon repast at small cost.

This lunch room, equipped at a cash outlay of \$400 (which did not cover carpentry or plumbing) served a daily average of seventy-five people, and on rainy days its service was stretched to accommodate nearly two hundred. The room used was a deserted basement office, hardly twenty by twenty feet. A young girl was trained by the nurse to do the cooking in the most careful and sanitary manner. The service was entirely voluntary, the food being served at the noon hour by the employment manager, the nurse and several of the stenographers who cheerfully gave part of their noon hour in return for the lunch. This voluntary service proved a very helpful factor

in furthering the democratic spirit which we wished for. It is hard to imagine any ulterior motive in one who, voluntarily and cheerfully, serves you hot soup over a counter daily. There was evidently something in the quality of this service which won the confidence of our people as no other effort had done. We felt that if hired help had been depended on in this service, or in the management of the lunch room, much would have been lost. We demonstrated that given the rent, light and gas, a lunch room of this capacity could maintain itself without loss, covering the cost of food and of cooking and cleaning. The responsibility for the running of the lunch room was shared with the people by making one person in each department responsible for the sale of the checks which were taken in payment for the food, no money being handled in the lunch room.

The development of welfare features will vary with the number of employes and the wealth of the corporation, but where there is a group of even one hundred employes, the work will repay the effort put into it, in loyalty and good-fellowship. I know nothing of its dollar and cents value and believe it could not be estimated. In the smallest developments, the system should be so complete and so thorough that it may be stretched to meet growing requirements.

Records should be kept, showing the length of service of each worker, the cause of his visits to the nurse, frequency of such visits, remedies, follow-up work, home visits, etc. Notes should also be made as to nationality, citizenship, standing in community, and interrelations with other workers. Such records will, in the course of time, give some valuable statistics in the comparison of departments, from the health viewpoint, and are further absolutely essential in order to keep in touch with the worker, as one cannot rely upon memory.

From the standpoint of the nurse, the work in an industrial plant has in it all the elements which make up a satisfying occupation. It deals not alone with the details of the moment, a routine filling every hour, nor alone with a large problem, out of the study of which one hopes to produce statistics and data which will aid in its solution, but it embodies both these conditions. The routine and daily work would be wasted in the long run were they not part of the study of the larger problem. The attempt to study this problem would be unsuccessful were not many methods devised for get-

ting close to the people—not only to serve their needs, but to see things with their eyes.

The work brings up all the conditions that relate to public health or social service work of any nature. From the outlook of public health the best reason for work inside a factory, in its value to the community, is because there one finds and can strike at the root of evils which are powerful in undermining health, and which are the target of the efforts of hospital clinics and social workers. The proper structure and care of toilets is closely allied to the work of the medical profession in finding the causes and cures of venereal disease, the destructive effects of which on innocent victims are daily shown in hospitals and clinics. The careful washing and sweeping of floors in industries where poisonous dusts accumulate is an effort in harmony with that branch of medicine which is seeking to prevent occupational disease.

It is therefore a work which is educational to the employer as well as the employed. I feel that when an employer has awakened so far as to realize that the force which turns out his product is composed of *people*—not machines or power, or money—but human beings like himself, this education has commenced. It is broadened when conditions affecting these people are brought to him again and again, and he sees that their point of view is the same as his would be, could places be changed. If still further he realizes that what affects the people to their detriment must, in its widening circle, affect the community, and ultimately, like a boomerang his own prospects, he will finally see that the first and last analysis reads very much like the old-fashioned golden rule. He will find then too, perhaps to his surprise, that he is one of the forces working for the public weal, when he had only intended to “keep his employees happy.”

When our industries have recognized their responsibility for the human lives in their employ, and by compelling health and efficiency have raised the standards of the working people, there will be fewer derelicts to cast on the mercies of hospitals and charitable societies.

PERSONNEL AND MEDICAL AUDIT

THE SELECTION, TESTING, TRAINING AND WELFARE OF EMPLOYEES

By F. E. WEAKLY,

Manager, Department of Efficiency, Montgomery Ward and Company of Chicago.

One of the biggest problems in our business aside from the fundamental one of making a profit is the study of our employees. Much time, thought and expense have been devoted to this subject of human relations and it seems as though our work has only begun.

The analysis and reduction of labor turnover depend upon a thorough knowledge of the employees as well as of the business itself. "Know thyself" was said several thousand years ago, but it has been left for modern industry to place a real interpretation upon it. Scientific management and efficiency methods have made it possible for us to appreciate in a way, at least, what it means to know yourself. This article, then, is only one chapter of a story dealing with how this business is endeavoring to learn and know itself. To know our faults is the first step forward in the correction of them. A scientific study and willingness to recognize the facts, as well as take definite steps to correct them, will strike a staggering wallop to labor turnover.

In order to get a clear understanding, we first began to study the reasons why employees leave. Quite naturally, in classifying these causes we were governed by local conditions in Chicago, as well as conditions in the plant.

The first thing we did was to take a map of the city and plot with colored tacks all the main sections of the city in which our employees live. This told an interesting story indeed. It enabled us to analyze transportation conditions; it explained why many people were constantly late—it was of immense use during the various street car and elevated strikes in enabling us to assist in getting our employees to and from work. It gave us something concrete. It aided us as well in suggesting proper places for new employees to live. Every new employee is now charted on the map

by the district of the city in which he lives. This shows on his card in the permanent index in the employment department.

WHY EMPLOYEES LEAVE

We then made up a weekly employment record which lists under ten main heads the reasons why employes leave. This analysis gave the total number of "leavers" for a series of seventeen different payroll groups, as is shown in Chart A.

NUMBER OF EMPLOYEES ON PAYROLL WEEK			EMPLOYEES JOINED THIS WEEK					EMPLOYEES TAKEN FROM PAYROLL THIS WEEK									
ENDING _____			Ret.	From Other Divisions	Trans. to Other Divisions	To Take Other Position	To Stop at Work	Leaving City	Married	Amount of Health Ins. received	Unhappy factory	No Reason	Quit	Temporary	TOTAL	S.	
Group	1913	1914															
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
TOTAL																	

CHART A

This chart began to furnish concrete data and enabled us to get at things. This report was made up weekly. In the course of time we began to accumulate comparative figures. This report did not tell us enough. Today the analysis of why employes leave is carried much further.

Classification of Causes for Removal from Payroll**Other
Positions**

1. Better Salary
2. Former Position
3. Going into Business
4. More Promising Position
5. Position Nearer Home
6. To Learn Trade
7. To Return to Trade

Leaving City
To Marry
On Account of Health

Health

1. Own Accord
2. Number 98 (To Division Supt.'s a/c Dr.'s Orders)

**Dissatis-
fied**

1. Did Not Like Supervision
2. Distance Too Great
3. Refused Temporary Work
4. Refused to be Transferred
5. Resented Criticism
6. With Salary
7. Did Not Like Working Conditions
8. Work Too Hard

**Unsatis-
factory**

1. Agitator
2. Carelessness
3. Dishonesty
4. Drinking
5. Fighting
6. Financial Difficulties
7. Indifference
8. Insubordination
9. Irregular Attendance
10. References
11. Superintendent's Private File
12. Suspected of Pilfering
13. Too Slow

**No
Reason**

- Reduction of Force
1. To Go to School
 2. To Stay at Home
 3. Worked Less Than Two Weeks—
Failed to Report
 4. Worked More Than Two Weeks—
Failed to Report

CHART B

Chart B shows a detailed analysis of the various causes, especially those causes in which we may or may not be directly to blame, and is the key for reading Chart C.

		97	99	80	81	83	85	86	50	60	61	62	63	64	48	etc.
	Total															
Checker																
Stock																
H. Order																
L. Order																
Fr. Pac.																
M. Pac.																
Wrapper																
Short Boy																
Sorter																
Section																
Nailer																
Paster																
S. R. Gen'l																
Truckers																
Pit Stock																
Hustler																
		97	99	80	81	83	85	86	50	60	61	62	63	64	48	etc.
Av. length of Ser.																
Checker																
Stock																
H. Order																
L. Order																
Fr. Pac.																
M. Pac.																
Wrapper																
Short Boy																
Sorter																
Section																
Nailer																
Paster																
S. R. Gen'l																
Truckers																
Pit Stock																
Hustler																

CHART D

The case of every employe who leaves is carefully investigated. If an employe fails to make good in one department on one class of work, due to no cause that would warrant immediate dismissal, he is tried on several jobs. This is always handled by the employment and educational departments.

A careful and intelligent effort is devoted to the proper placing of each individual. To aid in our selection of employes we have what might be called a vocational bureau, which is a part of our employment and educational work. The purpose of the bureau is to aid in the scientific selection and fitting of the worker to his task. Supplementing and working with the bureau is an activity we call "plant instructing" or teaching the worker on the job his or her specific task. We place a great deal of faith, first, in the proper selection of the employe; second, in the proper training of the employe.

A fact that we try to recognize is that all people are human. The application of this principle begins in the employment department. Every applicant for a position is interviewed courteously whether we have a position for him or not.

DEALING WITH NEW EMPLOYES

Now to understand just how the several plans work, I shall take as an illustration the case of a new applicant who has applied for a position as a checker in one of our merchandise divisions.

If the interview is satisfactory, the applicant fills out the application form. If this is found to be all right, she is sent to the vocational bureau where she is given a general intelligence test in accordance with the outline of the qualifications for her work, her job and herself as is outlined a little further on in this paper. If she fails to pass the test, she will be courteously talked to and an endeavor made to place her at work for which she is suited. If we have no such place, of course, we shall be unable to use her. If she passes the test, she will be sent to the medical department for a physical inspection. If she has no glaring physical defects that would seriously hamper her in her work, she is allowed to pass. Upon returning to the employment department she receives her assignment as a checker, the necessary forms are filled out to attach her name to the payroll and she passes to the educational depart-

ment for general instruction lasting usually about one hour. After three weeks she will be called by the medical department for a thorough examination.

The educational and welfare division is in active coöperation with all of our different departments in various ways. In the first place, it works with the employment department. All newly employed men and women come to this division for instructions and tests before going to their prospective tasks.

As a result of these tests over one period of time only three people whom the vocational bureau passed have failed to make good, while seventy-two have been prevented from being hired for work which they were really not capable of doing. If the figures were taken for an entire year, the results would be even more interesting. For instance, in our wall paper division, we tested forty-six men who were hired in a few days' time. Five of these forty-six men proved to be color blind and not one of them knew that he was color blind.

The instruction sets forth the nature of the business; the firm's ideals of service to the customers and sense of responsibility for its employes; and emphasizes the various welfare and educational features available for all employes. Women are advised by the woman head of the educational department concerning appropriate attire for business and are instructed in matters of hygiene and business ethics. Close personal contact enables our instructors to become better acquainted with these employes and helps them to discover the future possibilities of their pupils. For example, a young woman with a high school or business college training, capable of being a good stenographer, because she has been out of work a few months, or because she lacks confidence in her ability to take dictation in a strange place, accepts work in some minor position. In this case she receives a smaller salary than she is capable of earning, she loses that technique she strove to gain in order that she might place herself in a class beyond the one she is now filling. The instructor notes this situation and later, when there is an opening for a stenographer, this young woman will be allowed, along with others, to try out for the position. Her experience in the house makes her more valuable than a new candidate. The same plan is followed with the men by the head of the men's educational work. This illustrates in a measure at least how valuable a personnel audit at time of employment is for follow-up purposes.

ANALYZING THE WORKER

In order to broaden the scope of our study we next made an analysis of the worker herself. The following outline shows just how this was done:

- I Checker's individual history covering service here and elsewhere
 - A. Age
 - B. Education
 - C. Previous experience
 - D. Length of service here
 - E. Starting salary and advancement
 - F. Natural activity
 - 1 Incentive
 - 2 Promotion
 - 3 Instruction
 - 4 Training
- II Intelligence tests
 - A. Accuracy
 - B. Speed
 - C. Native ability
 - D. Ability to follow instructions
- III Firm judgment
 - A. Manager's and supervisor's opinion covering respective checkers
 - 1 Ranking
 - 2 Accuracy
 - 3 Speed grade

We next made an analysis of the work, which in this case is checking.

- I Elements
 - A. Familiar or routine work
 - 1 Comparison of figures
 - B. Unfamiliar work or irregularities
 - 1 Description
 - 2 Sizing, marking and numbering items
 - 3 Substitutions
 - 4 Explanatory stamps
 - 5 Quantity
 - 6 Technical or trade terms
 - C. Accuracy
 - 1 Relation to other activities
 - 2 Equipment
 - D. Speed
 - E. Instructions
 - 1 Printed
 - 2 Verbal

F. Training

G. Supervision

H. Promotion

- 1 To other work
- 2 From other work

After a careful analysis of the work and the worker we next determined the standard for the requirements or elements that go to make up the work of checking and, with the aid of the vocational bureau, a test was selected with which we were able to secure a grade on the desired qualifications. The outline of this test is as follows:

A. Comparison, or checking of familiar or routine work

- 1 Accuracy
- 2 Speed

B. Ability to meet or grasp a new and unfamiliar situation

- 1 Accuracy
- 2 Speed

C. Ability to follow instructions

D. Native ability

The results obtained from the analysis and tests have made it possible for us to work toward a standard for girl order checkers.

I. Classification

A. New employees

1 Experienced (six months)

- a. Clerk
- b. Clerical
- c. Age

Preferable (21 years and over)

Acceptable (18 years and over)

2 Inexperienced

- a. Age (21 years and over)

B. Transfer and promotion

1 Age (18 years and over)

II Intelligence test (75 per cent)

III Salary

A. Starting (\$8.00 and \$9.00)

B. End of sixty days (minimum \$9.00)

IV Promotion

- A. Record clerk
- B. Pricers
- C. Mail readers
- D. Supervisors

Form No.

INDIVIDUAL WEEKLY RECORD OF.....

Date Employed.....

[illegible]

CHART E

(Card 4 x 6")

This record is maintained by superintendents in cases where no bonus is in effect. On work where we are able to apply bonus, we keep a little different record, as shown in Chart F.

Figure 609. 0100

INDIVIDUAL WEEKLY RECORD OF

[illegible]

CHART F

The purpose of these records is not only to let us know more about what we are doing, but to enable us to place employes on work where they will not only be the greatest use to themselves but to the business in general.

To illustrate this point, I will cite a case that is typical of a number. Wm. K. was an order filler. The work in his department had been standardized by the department of efficiency. He had not drawn any particular attention his way in the past until the bonus was applied. Under careful instruction his record began to show very well. He earned a high bonus, about 50 per cent of his salary. He was taking an interest in the business. His record looked so good that we wanted to know more about Wm. K. It developed that this young man had real ability along advertising lines, and as a consequence, the educational department secured the much desired opportunity for him in the advertising department. He is there today and making good. It is safe to say that his ambition and ability would have led him from us had we not discovered it and placed him where he belonged. It was good for him and it was good for the business. This is just an example, we might say, of what is possible, but on a larger scale, when concrete and definite steps are taken to know one's employes. Such records make it possible to know the efficient as well as the inefficient.

Supplementing all of the foregoing analyses still another index or audit is maintained by the superintendent of employment. Twice a month he visits each superintendent in the house and talks "employes" to him. He secures a rating on each employe by the superintendent in charge under three classes—A, B and C.

An employe in the "C" class must reach the "B" grade in a reasonable length of time or we conclude that he is unsuited for his work and should not remain in it. This seems to clinch the other studies that are made in such a way that it is next to impossible for an employe to be missed or overlooked. Every executive studying his employes and recording his data in such form helps immensely in studying labor turnover problems.

MEDICAL AID FOR EMPLOYES

A few years ago there was passed, in the state of Illinois, a law called "The Workmen's Compensation Act." The text of the act covers many pages, but the definite idea and purpose of the bill is

the protection of the working people. Injuries received while in performance of the duties are compensated by specified sums. In case of death or injury, a sum based upon the annual earnings of the deceased must be paid to his beneficiaries by his employers. A similar law is in effect in many other states.

While the Workmen's Compensation Act serves an excellent purpose, its protection covers only persons injured while at work. As we use comparatively little high speed machinery in our plant, accidents to employes are few and rarely of a serious nature. On the other hand, the ordinary ills of humanity are always present and among our thousands of employes, a varying number are always in need of medical or surgical aid and the Workmen's Compensation Act does not cover cases of this kind. The prospect of the doctor's bill is always viewed with dismay by the working man or woman and the savings account shrinks sadly when the bill has to be paid. Realizing that the establishment of a first-class free medical department, relieving employes of the burden of expense consequent upon illness, would result in an increase of happiness, health and efficiency among our people, the move was made by this company on a broad and liberal basis:

The medical division in our Chicago plant, which is the largest of our stores, consists of a chief of staff, who is the head of this department, as any other manager is the head of his, three other physicians—two within the office and one for outside calls. There are, in all, four nurses—one who gives all her time to the doctor's office to assist in the care of the women, one nurse and her assistant who look after the work in the emergency rest room, one visiting nurse whose entire time is utilized in making follow-up calls for the visiting physician and in keeping an eye on the home conditions of the men and women.

With this force of physicians and nurses it has been possible to accomplish some rather remarkable results, the most notable being, no doubt, the feeling of health security that the employes enjoy. The main desire has been to stamp out tuberculosis, but tuberculosis has many ramifications—it involves a consideration of heredity, of bad housing and insufficient food, of questionable personal hygiene and surroundings. To consider the acquired disease only would be to take a very superficial view of it, indeed. It was to obviate its

incipiency that we adopted the plan of giving our men and women malted milk.

SERVING FOOD BETWEEN REGULAR MEALS

It has been observed by students of economics that a worker will apply himself with an upward curve of efficiency until about ten o'clock in the morning. From then on the curve begins to dip until luncheon time. His food and rest refresh him, and he works very well until about three in the afternoon. Again his work begins to lag, and reaches a low mark at about half an hour before closing time. It occurred to us that if we could anticipate these periods of exhaustion and prevent them, the saving in health and energy would in time be considerable.

We instituted the plan of serving free to every employe who our physicians thought would be benefited, at ten in the morning and at three in the afternoon, a twelve-ounce glass of malted milk, double strength. During 1916, 80,189 glasses of milk were served in our Chicago store. While the apparent expense of this is large, even from a business point of view, it is a good investment. The increase in energy and good-will more than offsets the cost of the malted milk. Naturally in so large a store many will come to us with hasty or insufficient breakfasts. They cannot do the most efficient work with empty stomachs. Out of a room where several hundred girls work, there were chosen at random twenty girls. In a period of six weeks the least gain in weight by any individual was ten pounds and by the most, twenty pounds. The most happy result, however, has been that we have been able to cut out iron tonics and cod-liver oil, with which we were accustomed to keep our girls built up. What they needed was food and heat units, and not the stimulation of drugs.

If mere numbers are interesting, it may be surprising to know how many people meet the doctors and nurses in a year's time. There were treated in the doctor's office of our Chicago store alone in 1916, 49,537 employes. Of this number, to be sure, many were subsequent visits of the same patient. There were 209 accidents of sufficient seriousness to cause the employe to seek the assistance of the doctors. That is a very small number, in a year's time, among so many thousands. There were ninety-five operations performed in the hospital, and 188 were cared for in the hospital for illnesses non-surgical. Our visiting nurse made 2,297 calls. While these

figures are large, we should not wish them to be interpreted as meaning anything half so important as the fact that so many have thus grown to appreciate our usefulness to them.

All employees may take part in the benefits of the medical service, but those who have served one year in the employment of the company become entitled to special medical benefits. The distinction between those who have served one year and those who have served less than one year is that the former receive attention either at the store or at their homes for illness or injury in all cases, under direction of the medical director or his assistants; while the latter receive attention in cases of illness only at the doctor's office in the store. In cases of injury the Workmen's Compensation Act requires a limited amount of service to the injured person, but the effective organization of the medical department enables the company to provide every necessary attention under the direction of the medical director for complete recovery.

INSURANCE FOR EMPLOYEES

July 1, 1912, the company inaugurated an insurance plan whereby married employees, of five years or more service, upon decease, would leave the following benefits:

Funeral and burial expense, \$100;

Pension to widow, 25 per cent of last wages;

Pension for one child 20 per cent additional, or for two or more children, 25 per cent additional. Therefore, for a widow and two children a pension of 50 per cent of the wage of the deceased employee would be left by him as a benefit that would continue in the case of the children as long as there were two under sixteen years of age. When only one child under sixteen years of age was left the pension for it would reduce to 20 per cent and at sixteen years of age this pension would cease. The pension for the widow would continue as long as she remained unmarried. All the above pensions are payable weekly.

For unmarried employees the insurance plan provides for benefits of

Funeral and burial expense, \$100;

One year's wages to beneficiary named by deceased employee.

The company pays the entire cost of insurance premiums, and

the only condition required is five years' service in the employment of the company.

The Employees' Mutual Benefit Society is an independent organization open to employees after one year's service. Employees pay dues of twenty-five cents, thirty-five cents or sixty cents per month, depending on classification. In case of disability from illness or accident, the society pays the sums of \$5, \$7 or \$10 per week, according to the class of membership.

The Employees Savings and Loan Association is a mutual organization to encourage thrift, create a savings fund, entitle members to borrow money therefrom, and distribute the earnings and profits among the members. At the present time the employees are depositing \$3,000 a week.

DENTAL CARE AND EDUCATION

Before installing a dental office to serve our employees we opened up correspondence with various corporations which were already operating a similar plan and received the benefit of their experiences. In one important respect we disregarded the advice of practically every concern with which we had correspondence. Invariably they advised us to confine our dental work to caring for emergency cases, making examinations, giving advice as to the care of the teeth and referring employees to outside dentists to have the work done. We felt that the price asked by the average dentist tended to prevent many people having their teeth properly cared for and we could not see how a dental office doing only emergency work and examinations would remedy this drawback.

Our employees have come to know, and repose great confidence in our medical department. In fact, its attitude toward them is distinctly paternal, services being rendered in a very kindly spirit. We felt that a fully equipped dentist's office doing good work at low prices would benefit by the confidence which our employees repose in our doctors and nurses. We, therefore, decided to equip such an office and announced that examination and emergency work would be free and that the charge of all filling, crowns, etc., would be simply the cost of the dentists' time without loss of wage by the employee.

Through contact with the employees the doctor's office had a record of a large number of persons whose teeth required care and advised the people on this list to visit the dentists' office. As a

result we immediately had several hundred applications for examinations.

Our plan of procedure is that after making the examination, the dentist gives the employe an estimate of the cost and asks him whether he prefers to have work done in our store or by his own dentist. Our comparatively low prices nearly always result in our doing the work.

We are employing at present in our Chicago store about 5,500 people and are now running three dentists' chairs all day. We have work enough engaged to keep the dentists busy for three or four months and find it is all they can do to take care of the examinations and free emergency cases between regular engagements.

We feel that the expense of rent, light, heat and employes' time lost is more than offset by the improvement of health, happiness and consequent efficiency of our people.

A desire on the part of the educational department to help employes get ahead led to the formation of evening classes in English and in the use of the dictating machine, comptometer, stenography, etc. On a class evening, a few minutes after the closing bell rings, young women throng into the recreation room, where a supper furnished at a nominal sum is waiting for them. After this comes twenty minutes of dancing, then classes in the subjects mentioned above and those in sewing, dancing, English, etc., meet until eight o'clock.

Classes for boys are held twice a week. Instruction is given in English and principles of the mail order business. We have enrolled in the classes a group of interested and ambitious young men from various departments of the store.

Our regular work day is eight and one-half hours, except Saturday. We close at noon on Saturday during May, June, July, August and September, and at 3:00 p. m. from October 1 to May 1, except during the rush period. Women employes are given ten-minute rest periods forenoon and afternoon. Comfortable chairs with backs are provided for all persons who work seated, with foot rests for those using high chairs. In wet and stormy weather dry stockings and skirts are loaned to women employes who reach the store with wet feet while their own apparel is being dried. Umbrellas are loaned to employes when it is raining at the closing hour. In order that women employes may procure seats in the street cars

they are permitted to leave the store ten minutes before the closing hour for men. Sanitary bubbling drinking fountains are located at convenient spots throughout the store. Sanitary toilets and wash rooms and individual towels are provided for men and women, also storage for employes' bicycles, motorcycles and automobiles. Ample fresh air and light are features of the store. All employes who have been in the company's service previous to October 1 of each year receive a vacation with full pay the following summer. Promotions are nearly all from the ranks.

GENERAL WELFARE WORK

In its relief work the welfare division is an instrument of co-operation between the managers of the divisions, the head of the educational division, the welfare visitor and the medical staff. In order that this co-operation may be effectual, there exists a committee composed of two representatives from each section of the plant, a man and woman whose function it is to become acquainted with their fellow workers so that they may assist the manager in dealing with problems of relief and advice. The manager reports to the head of the educational division cases which he wishes to have investigated, and those upon which he desires advice or assistance in any special way. If the case is one which has to do merely with an inside situation, the head of the division may attend to it alone. If home problems enter in, the welfare visitor goes to the home and reports conditions. Upon her discoveries is based, to a large extent, the nature of relief. For instance, she may find seriously ill a young woman who has not worked for the house long enough to be entitled to membership in the Employes' Mutual Benefit Society. Since she is the sole support of her widowed mother, their income has ceased. In this case the visitor may suggest that a month's rent be paid, a supply of groceries and fuel given, and medical supplies sent from the doctor's office. This department has worked along with the medical staff in cases of lingering illness, supplying weekly orders of staple groceries, rent and fuel, for periods ranging from several months to two or three years.

Other forms of relief are disability allowances, transportation and small loans for a few days. Loans of larger amounts are made by employes in crises which necessitate larger single expenditures at a given time than they are able to meet. This money is loaned

without interest and taken out of their wages in weekly installments. This is done to discourage them from patronizing installment houses and loan sharks.

Besides giving financial aid this division is frequently asked to help those who need to be put in touch with other social agencies and institutions. Service in such instances often mean going with the one in trouble to the Court of Domestic Relations, the Legal Aid Society, and other such places. The presence of someone in a position of influence gives confidence to the one in trouble and insures a more intelligent interview and full consideration of the case.

In connection with the educational division is a branch of the Chicago Public Library. The city furnishes books free. The company furnishes the room and a competent librarian who selects carefully the list of books for the shelves. A supply of approved technical books on business subjects, advertising, office management, scientific business management, etc., is always available and employes are encouraged to avail themselves of these opportunities for acquiring valuable knowledge.

A restaurant is maintained which furnishes palatable, properly cooked food at cost to our employes and patrons. Our Chicago restaurant will feed as many as 2,500 persons in a day. Tables and chairs are provided for employes who prefer to bring their lunch with them.

The monthly noon musical in the recreation room is a cultural feature of the social life. From 11:30 to 1:30 a program of instrumental and vocal music, and such special attractions as whistling, quartettes, orchestra and chorus work is given by the employes. It is on these occasions that one becomes acquainted with his fellow workmen. In this group one finds leaders of choirs, members of bands, and of orchestras, amateur performers of ability and even a composer of popular songs.

While the recreation room is for the exclusive use of the women for dancing during the noon period, it is used for dances for men and women at other times. Any division properly chaperoned can give a dance here and this privilege is frequently taken advantage of on Saturday nights. One large division dances for an hour every Friday evening after work. Though three hundred can be accommodated here it is too small for the big general affairs which are given several times each year. For these larger quarters are provided.

The Employees' Mutual Benefit Society gives a picnic each summer. This is a gala event of the season. The store is practically closed all day, all who wish to attend the picnic being excused with full pay for the day. The 1916 picnic at Riverview Park was attended by 8,000 people. The program of games covered a period of about five hours and prizes worth \$250 were given.

Among the social features for employees are girls' clubs, bowling leagues, a billiard league, and an orchestra, athletic fields with baseball diamonds and tennis courts.

Restaurant and dentists' service are furnished at cost. The Employees' Mutual Benefit Society is maintained by the employees themselves. Life insurance, medical services, nurses, hospital fees, ambulances, medicines, malted milk, welfare and educational work are the free gifts of the company. There is no expense whatsoever to employees. It is a matter of reciprocation. The employees are encouraged to give the best services to the firm, the firm in appreciation offers to aid in the conservation of their health, their mental improvement and in the protection of their families in case of death.

The result of all these things is that throughout the entire business there exists a spirit of loyalty and solidarity that could be effected in no other way. We believe it pays to know our employees.

PLANNING PROMOTION FOR EMPLOYEES AND ITS EFFECT IN REDUCING LABOR TURNOVER

BY PHILIP J. REILLY,

Employment Manager, Dennison Manufacturing Company.

The labor turnover figures of many industries are sometimes increased because no studied effort has been made to plan the promotions of worthy employees. In many industries it is possible to promote employees systematically. When this can be done, it is well worth while to establish a policy of regular promotions, and to adhere to it as far as practicable when filling any positions of preferment.

In our manufacturing organization, the majority of the occupations furnish in themselves sufficient scope for promotion, since they enable an unskilled worker to become skilled and to earn a wage that will be equal to or even better than the wage earned by the average worker in the trades. Any plan for regularly advancing employees must provide for a rerating of employees at certain intervals even in these occupations, so that deserving employees will be granted unasked-for pay increases. To effect this result, we have established the policy of going over the records of all our employees once a month, for the purpose of rerating them. This is done by the department heads. In addition to this, the employment department checks up the pay rates in such occupations at regular intervals so as to bring up for promotion the names of any employees who may have been overlooked.

Some of our occupations, however, do not in themselves offer to the ambitious employee much opportunity of advancement. These jobs are merely used as feeders to positions with chances for advancement. When such positions are so used, we find that a higher type of employee can be attracted since many industrious applicants will, for the time being, accept positions whose requirements are somewhat beneath their capabilities, provided that a way of escape is open from these positions into the more desirable ones.

The job analysis form which we have on file for each position in our industry indicates the lines of probable promotion from the feeder positions. The information given by this form enables the

selector to inform an employe engaged for "jogging" in our label department that he will get the first chance on guillotine cutters, when a vacancy occurs. Employes engaged for chopping in our board department will get the first chance on paper cutting when a vacancy occurs. Truckers in our shipping department always get the first chance to do packing; and in the same department, bundlers and order-fillers get the first opportunities to do checking. The latter named positions are the better paid and usually the most satisfactory to the average employe.

Thus we have developed in our business outlets to better positions from practically all the feeder jobs. This practice results not only in obtaining a better grade of employe for the feeder positions, but also in making better workmen of the employes when they reach the higher positions by virtue of their experience in a connected line of work.

This plan also takes care of the large proportion of our transfers; but an employe is free at any time to come to the employment department with a request to be transferred. In 1916, 60 per cent of our transfers were made by the employment department for the employe's advancement, while only 5 per cent were made at the request of the employe. If this group of employes had left dissatisfied, our labor turnover would have been increased 10 per cent.

We have found that there are certain types of positions which are more attractive than others to our employes. In filling these, older workers are given preference, other things being equal. Clerical positions are always sought for. Any positions which are much sought for usually have a small labor turnover. This is true of clerical positions. Therefore, we have found it possible to place in clerical positions only a fraction of our applicants. This is especially true in June when high schools and business colleges are graduating additional applicants for these positions.

We have found many applicants who, unable to obtain clerical positions immediately, are willing to take factory jobs, provided they are assured that they will be given consideration for clerical positions when vacancies occur. Under these circumstances, applicants are placed in various factory positions, which do not require a long period of training, and from which they can be promoted to good advantage into clerical positions. A record of the applicant's preference for clerical work is kept in the employment

department, and when vacancies occur, this record is consulted and applicants selected from the factory for office work.

Of course for certain positions, requiring training along special lines, we must employ outside applicants from our waiting list. In the large majority of cases, however, the clerical positions are filled by employees who are on our factory pay roll. We have found that in the more difficult clerical positions, the employees who have had factory training are more satisfactory than the clerks who are hired direct from the outside, who have had no training in our business. Aside from this advantage, we find that the free flow of workers from factory to office rather makes for a democratic feeling, since there is less class distinction between the office and factory group when the office group is largely composed of former factory employees.

Desirable positions are open from time to time toward which none of the regular factory positions naturally lead. These usually consist of special jobs, requiring unusual qualities or exceptional ability. One means of discovering employees who would be in line for such positions is to develop a list of exceptional employees. Our record for this purpose represents employees who are above the average in their present jobs, and who could probably fill positions of more responsibility. Two or three names are selected from this list, and a decision made as to who should be placed in the position in question.

In our industry, this list is developed and used by the personnel committee, which is a subcommittee of the executive committee of the factory. Names are added to this list from the reports this committee receives from time to time from foremen and department heads.

The listing of names of worthy employees, when solely the act of the management, may occasionally overlook some employees who deserve recognition. To prevent this, we invite employees who feel that they deserve promotion to seek an interview with the personnel committee. Thus an employee by writing a request and dropping it into the suggestion box, may obtain an interview. The suggestion department delivers all such communications to the employment department, which obtains the data covering the employee and presents them to the personnel committee for study at the time it is ready to meet the employee.

The policy of having regular promotions for employees is not always easy to follow; but when generally adhered to, it yields very happy results. It may appear to mean additional work for the employment department because at least two, and sometimes several, employees are affected every time a vacancy at the top occurs, but this long-sighted policy will usually compensate for itself in the final result that it brings.

This results in developing an organization of employees who are versatile, because most of them have had experience at more than one job. Such an organization will function more smoothly and engenders loyalty and *esprit de corps* because of the satisfaction felt by employees who have had the chances their abilities deserve. Finally, it reduces measurably the labor turnover because there will be few if any exits from the pay roll due to employees having had no chance to get ahead.

In adopting a policy of systematic promotions, a fundamental principle is to plan in advance the channels of promotion within departments and from one department to another, and outline these channels on the job analysis form.

The next principle is to keep a practical record that will reveal promising employees, and to record separately special training or aptitudes which certain employees have, and which can be used in higher positions when vacancies occur.

The third principle, which is of extreme importance, is to choose from your present force first for all positions vacated, except the feeder positions. The fourth principle is to invite employees to request promotion when they are dissatisfied with their present positions.

Whether promotion is deserved or not, discussing the matter with any employee in an organization results in a better understanding; and if the promotion is not deserved at the time the request is made, the employee can be encouraged to win it by making every effort in his present work, or by devoting his spare time to the study of the particular subject that will fit him later for the promotion he desires.

THE REDUCTION OF ABSENCES AND LATENESS IN INDUSTRY

BY JOHN S. KEIR,

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It is, perhaps, heresy to quarrel with an old adage. In line, however, with a current bit of philosophy that it is as expedient to be hanged for a sheep as for a lamb, this paper will take issue not with one old adage, but with two. There is a proverb that to be absent makes one conspicuous. Another holds that the absent are always guilty. We wish to take the ground, that neither of these is of necessity true. As it is an economic axiom that no progress can be made until there is a definition of terms, it is necessary, before going further, to understand that "the absent" under discussion are the industrial absent. And by "the industrial absent" are meant—Jones, the machinist, who does not come to work on Monday morning and Smith who loses half a day on Wednesday. By absence we do *not* mean labor turnover or unemployment. Absence is unquestionably a factor in labor turnover, but for our purpose the terms are by no means synonyms. Turnover is the broader term.

It is said that a man's, or firm's, pocketbook is a vital organ. It would seem then that anything connected with the apportionment or outlay of the purse's contents would be known to its owner. But there are practically no figures obtainable on the exact cost of industrial absences. Moreover, as one firm admits, most estimates in this connection are not estimates at all; they are simply wild guesses. Closer estimates, however, may be made in an indirect way. For instance the L. Bamberger Company of Newark estimates that they have to employ 5 per cent more people than is absolutely necessary because of the factor of absence. The Dennison Manufacturing Company figures the average wage loss to be forty-two cents a week to each female factory worker, and forty-nine cents a week to each male factory worker, these figures based on the average weekly wage being paid at the time the study was made. The total wage loss is \$50,000 a year. A concern in Detroit is spending \$50,000 a month

to prevent absences; and the firm considers the money is well spent. At one time, the Beacon Falls Rubber Shoe Company found that they could rely on only 60 per cent of their workers showing up for any one shift. The Curtis Publishing Company reports an average of forty-two cases of absence in every 1,000 employe session during the month of January, 1917. The Crompton-Knowles Loom Works finds an average absenteeism amounting to $8\frac{1}{2}$ per cent. If these figures be multiplied by the 270,000 industrial concerns that there are in the United States the cost and the amount of absence looms tremendous.

That this amount of industrial absence is not conspicuous and is not, particularly, under the suspicious eye of the purse holder, is a curious fact. Only about one out of twelve concerns makes any effort to check up or remedy this condition.

In discussing the second heresy, namely, that the absent are not of necessity guilty, it is essential that investigation shall go into considerably greater detail than was the case with the first. In the first place what causes lie back of absences? In the second place, what various methods have been employed to overcome or combat absences?

In taking account of the reasons back of absences, it must be understood that those mentioned in no way constitute the complete list. It is a question whether or not a complete list could be obtained no matter how exhaustive an investigation might be made. Only those causes most evident and generally recognized will be discussed.

A prolific source of absence is latenesses. This may seem a paradox, yet the connection is a fairly obvious one. Here again exact figures cannot be quoted, but a few general examples will suffice to bring out the point. A great number of manufacturing plants adopt a policy of locking their gates at a certain time in the morning or afternoon, and keeping them locked until that particular work-period is over. The Cleveland Metal Products Company, for instance, after 7:15 in the morning is closed to the employe until noon. The Fore River Ship Building Company closes its plant to the straggler after 7:45 a.m. and 12:45 p.m. The General Electric Company at Lynn follows this same idea, as do many of the large textile mills at Lowell.

The first cause of lateness is poor transportation. This is

particularly true for those people who live outside the city and come in for their work. For example, one employe of the Lanston Monotype Company in Philadelphia owns a farm in New Jersey. The transportation facilities are such that he has to get to the factory either a whole hour before the plant is scheduled to start, or come in fifteen or twenty minutes after it has started. He generally chooses the latter. The foreman or executive, of course, has the right to tell him he must get there on time or not come at all and to do it without looking up the actual conditions and attempting some adjustment fair to both the man and the firm. This particular man has been with the company fifteen years, and to give up his farm in New Jersey would be a severe financial blow to him. Such problems are very frequent, under the present haphazard system the individuality of the person in question too often is the deciding factor in meeting issues of this sort. Transportation tie-ups within the city or town are too common to need any further discussion.

Another obvious factor is the weather. Any school teacher is familiar with the increased tardiness on dark winter mornings. In a class of sophomores at one of our large universities, on a dark morning in February, eleven out of thirty were five minutes late. The Curtis Publishing Company finds the same is true of its working force.

The "habit of lateness" is another big factor. In our childhood days we all probably heard of the ten o'clock scholar, and we find him in business as well as in school. One executive has said that nearly 90 per cent of all lateness is simply "habit." Possibly that figure is exaggerated. But the habit is all too prevalent at best.

The actual location of the time clock should be considered in its relation to lateness. "When is an employe late?" Must he be at his post, or simply in the factory is a question which an employer should have in mind before he locates his time clock. Sometimes the clock is placed in the department, sometimes at the main entrance. For example, at John Wanamaker's Philadelphia store a girl rings up at the time clock which is nearest to her department, but she is supposed to be at her place when the store opens.

A great many of the causes of lateness are identical with the causes of absence and may be considered under that heading. A most important excuse for absence is sickness. Thus the L. Bam-

berger Company find that out of a total daily absence of .052 per cent, .033 per cent is due to sickness. The Edison Electrical Company of Boston places it at 2.5 per cent of all their absences, while the Hood Rubber Company places it as high as 60 per cent. Of course, "sickness" is a term which covers a multitude of sins. Some of it is not very serious, and some of it is entirely assumed. One firm has called it a "lack of gameness," a giving in to the slightest indispositions. It forms the handiest excuse, if an excuse is needed. Of actual handicapping sickness, however, there is enough to warrant consideration. The two most prevalent diseases are alcoholism and stomach trouble. In alcoholism, the location of the saloon has a direct bearing on this particular problem. There is a town in southern Connecticut which has fourteen saloons within three blocks of its busiest manufacturing plants, and within easy reach of a great many homes of the men who work in the plants. A mining town in Pennsylvania has saloons as near the shafts of the mine as the company will permit. "Stomach trouble" covers a multitude of ills, aches and pains.

With sickness is the whole gamut of industrial accidents. These, too, form a common cause of absence. The United States Steel Corporation found that over a period of six years with three hundred days counted to the average year, and in a plant employing 6,600 men, the amount of days lost per worker was 6.2 per cent in the steel works where the accident rate is high, and 2.4 per cent per man in the yards where the accident rate is relatively low.

The time of year affects absences. It has been found that school attendance is best during autumn and spring; that in the New York schools the largest number of absences occur in January; and the next largest number occur in June. Unfortunately no figures have been collected to show the results of this influence on industrial concerns.

The day of the week unquestionably has a place. "Blue Monday" has a very real ring from the manufacturer's viewpoint. The Dennison Manufacturing Company finds its largest percentage of absences on Monday. The Fore River Ship Building Company, over a period of two months, finds a consistent average of 10 per cent of absenteeism on this day, with, oddly enough, Thursday morning as a close second with 7 per cent. The Cleveland Metal Products Company has epitomized its situation as the "Monday

habit." The causes of Monday's prominence are legion. A great majority of executives seem to feel that much of the Monday absence is entirely voluntary and could be avoided. The common practice of paying on Saturday might be a factor in this question, for with his pay in his pocket and a day and a half off, there is nothing to keep Jack a dull boy—until Monday morning. Almost any pay-day will breed a certain amount of absence. Some firms have discontinued the Saturday pay-day.

The time of day also enters in. The Hood Rubber Company reports a 10 per cent absenteeism from the night shift as against 8 per cent from the day shifts.

The days after holidays come in for their quota of blame. The Fore River Ship Building Company quotes an increase of 3 per cent after a holiday. In a large university, out of a class of thirty-eight, only seven reported at the first meeting of the class on the day college reopened. Dr. Ellsworth Huntington, in a study of a Cuban cigar factory, says that the Cubans have a great aversion to working on Monday, the day after their very real and strenuous Sunday holiday. Only a small portion of the force appears; those that do come arrive late, and get only 80 per cent as much done as on other days.

Let us consider next some of those things which have more to do with the workers personally. The sex of the worker makes a difference. Nearly every concern which employs both men and women, such as, for example, the Esterbrook Pen Company, and the Campbell Soup Company, finds that, not only is there a higher turnover among the women than among the men, but also that the percentage of absence is greater in the case of the women. The A. M. Collins Manufacturing Company carries out a premium scheme *only* in the case of its women employes, because it was among them that the greatest amount of lateness and absence existed. The Dennison Manufacturing Company has been the best source of information on this point. They have found in the factory departments an absentee record of 5.2 per cent among the women, 3.5 per cent among the men; in the factory clerical departments the percentages were just alike; but in the clerical sales division, again, the women showed 2.6 per cent as opposed to 1.1 per cent for the men. In the office force there was thus no difference, while in the factory department the difference was striking. In

general, tardiness among women employes probably rests upon two main elements, physical limitations and home responsibilities. Many girls try to carry on a home job and a shop job at the same time, and it is perhaps a safe assumption that both jobs suffer.

The type of wage payment is another factor. Does the piece worker, because he can hurry and make up lost time, and because his time is in a sense his own, take a day off with an easier conscience and under less provocation than the day worker? Certainly it is open to argument.

Together with this question of wages, we must also consider raises in salary. Some men have said increasing pay means decreasing attendance, and others have taken the opposite view. The Fisk Rubber Company says that some of its men, who make eight dollars a day, argue that they can make enough in five days. The Cleveland Metal Products Company assumes that present high wages lead to a greater use of intoxicants and consequently to more frequent "lay-offs." On the other hand, these last few years have witnessed all kinds of bonus systems, profit-sharing schemes and blanket raisers. It is by far too big a problem to warrant any positive statements.

A rather nebulous factor in absence is an indefinite thing which we might label as the discontent of the worker. This discontent may arise from conditions outside the factory, such as lack of recreation in the locality, or from conditions within the factory, such as dislike of his particular job or friction with his foreman or with the men of his shift. It is almost impossible to measure or to trace the definite influence of an element of discontent, but it must be mentioned in passing, for it unquestionably has a definite effect.

The industrial situation and the condition of the labor market play a very important rôle in latenesses and absences. The Crompton-Knowles Company accounts for nearly all its absences on the ground of abundant work. In addition to the ease of obtaining a new job, the present high wages make the financial loss of an idle day or two a matter of no account. The Cleveland Metal Products Company finds that there has been a decided increase in the number of absences during the past year, and they attribute them to this cause. Tardiness has also increased in this firm, running a little less than 1 per cent of their entire force. The Joseph and Feiss Company show an increase in absence of 2.5 per cent per day in 1916

against 1.5 per cent per day in 1915, a change which they attribute to the present condition of the labor market. In a large shoe company in Philadelphia conspicuous signs are posted calling attention to the rules regarding absences and lateness, but one of the executives admits that in the past two years they have made no effort to enforce them.

As a last cause for absence we place the weather. It is perhaps because this reason is so obvious, that no one has ever taken the trouble to analyze it carefully. Probably the best work that has been done in this connection is a study of school children in New York City and in Denver, Colorado, made by E. J. Dexter. There is a great difference between the ten-year old school boy and the thirty-year old machinist, and yet these results might have some comparative value. It was found that on cloudy days attendance was not so good as on bright days. Fifteen per cent of all absences occurred at a time when the temperature was lowest, and the next largest group occurred when the thermometer registered above ninety degrees. The number of absences increased when the humidity was high, a thing not so hard to account for, high humidity almost invariably causing rain. Oddly enough the attendance of the boys seemed to be more directly affected by the weather than that of the girls.

There are other causes of absence for which firms are themselves directly responsible. Such things as a fluctuating work schedule and shutting down for inventory quite naturally make for an increased absentee record. The workman pays for this in time lost. But absences of this nature breed labor turnover, and for labor turnover the companies pay. Possibly the accounts balance.

So far we have been dealing with causes. Remedies must follow and of these there are two kinds: alleviation and prevention. Either or both must be sought and tested to fit individual and localized needs.

We have said that one of the causes of absence is lateness. If therefore we do away with lateness, *ipso facto* we may cut down absence. The "habit of lateness" is different. A student in a large lecture course in one of our universities came to class five minutes late eleven times in succession. Nearly all latenesses occur within the first half hour; 95 per cent is the estimate of the Midvale Steel Company, and the bulk of this 95 per cent is within the first ten

minutes. To combat this condition, this company levies a small fine on latenesses that occur within the opening half hour. The University student may be given half cuts. For an office force, it is said that a time clock is a great incentive to develop the habit of being on time—although a time clock is irritating to nearly all office men. Often a timely warning will serve to check the habit. An executive of a scientifically managed concern, found that one of his stenographers had the habit of being a little late. One day she failed to appear at all and he advertised for another stenographer. It so happened that she had a legitimate excuse for this particular absence; but when her lateness record was shown her she had no excuse to offer. She asked, however, for another chance, and during a period of three months since that time she has not been late once. The habit, however, is not always so readily and willingly broken.

The question of docking for lateness is much the same as the question of general docking for absence. There are, however, one or two systems which apply more particularly to lateness alone. Thus for example in the Cleveland Metal Products Company, for any fraction of time under fifteen minutes, a man is recorded as, and docked for, the full fifteen minutes. The Leeds and Northrop Company have a five and ten minute plan. If a man is late five minutes he is docked half an hour, ten minutes a full hour, etc. Schemes of this sort meet with varying success. A device which brings very real results is one which makes lateness difficult. If a man arrives late at the gate of the Fore River Ship Building Company and feels that he has an excuse, his case has first to be referred to the chief time keeper who in turn refers it to the foreman. If the foreman is willing, the man is admitted. It is found that the majority of men will make a special effort to be on time, rather than have to go through such a process. At Strawbridge and Clothier's store in Philadelphia those who are late must go to a central desk and sign a slip, with the result that latenesses are only about 2.5 per cent as against a former record of from 5 to 10 per cent. The J. B. Stetson Company requires a pass to be obtained before the tardy operative is allowed to enter his department. These passes are then filed and kept for future reference. At the plant of the Plimpton Press the "lates" report to the employment department. Then they fill out a "late" ticket giving the operative's name, his

number and the reason for his tardiness. Combined with this, is a sort of docking system also. If the employe is excused he is paid from the time he reports to his work place; if he is unexcused for any time before 8:30, he is given an 8:30 ticket and loses all time previous to that hour. The average per cent of lateness per working day in this plant is now only 2.47 per cent.

A variety of other devices of a similar nature are employed all with the same end in view, namely, to put a premium on coming in on time, by making it financially or conspicuously troublesome to come in late.

Docking is a device with which we are all familiar. To the piece worker docking is, perhaps, not serious for it is possible for him to make up the money loss by extra effort. The day worker does not have this opportunity. The Midvale Steel Company has a very definite system of fines for all sorts of minor offences. At the Curtis Publishing Company's plant any unexcused lateness is fined at the rate of time and half time salary rate. The German American Button Company levies a small fine for lateness, the proceeds from which are placed in an employes' trust fund for the financial support of general employes' activities. There seems to be a growing feeling against fining systems. Any such system becomes dangerous unless the employes know where the money from such fines goes. Moreover, a fining system is not usually adequate, for many employes will pay the fine feeling that in so doing, all responsibility on their part ceases.

The careful records of lateness and absence which are kept in any up-to-date employment department serve as an indirect fining system, since a man's record is a factor in determining whether he shall receive a raise for which he has applied. Thus, in combating lateness and absence, the A. M. Collins Manufacturing Company feels it is fundamental that the employes shall realize that those in charge know how often they are late and how often they stay out all day. To this end the firm prepared a card which shows the total possible number of hours for any one person to work, making allowance for holidays, shut-downs and things of a similar nature. The employes' record is kept on this card and it shows at a glance the comparison between the actual hours which he has worked and those which he might have worked. These cards are kept with other in-

formation and often form the basis for salary raises or for promotion, or supply the grounds on which either may be refused.

It has been said that one of the main weaknesses of our municipal governments is that no one is responsible. Centering responsibility for civil evils tends to remove those evils. This is perhaps true likewise of industry in general and of our problem in particular. The one exception to this has been the case where the responsibility has been centered on the foreman alone. That is not an altogether fair statement either, for the problem of absences is only one of the many that a foreman has to solve. We have seen how keeping records is one way of centering responsibility and it is possible to have a concentration of responsibility for lateness and absence. In this connection the Crompton-Knowles Company believes that continued pressure from high authority is the best way of keeping absences down to a minimum. (The absences are reviewed by the general superintendent, and by the works superintendent who in turn take them up with the department foreman. In this way the number of absentees has been reduced 30 per cent within the last six months. The Dennison Manufacturing Company on the other hand has given up the idea of concentrating the responsibility on the foreman alone. One of the most efficient methods is the posting of comparative bulletins. The Crompton-Knowles Company compiles a monthly report of its absentees, and it is the desire of the foremen to make a good report that stimulates them to give this problem its due attention.

In 1913, the Curtis Publishing Company began posting bulletins showing latenesses by division, and the standing of each division in reference to the others. Just recently absences have been added to this bulletin. From 1913 to 1915 latenesses were cut down from thirteen per one thousand to nine. Borrowing this idea of stimulating rivalry between the departments, Strawbridge and Clothier worked out a similar scheme. At first the bulletins were not issued but were simply sent to the department heads, and this system alone cut latenesses in half. The Lanston Monotype Company also posts a comparative bulletin, with the result that their absence record, while never very high, now runs less than 2 per cent.

In the Bridgeport plant of the International Silver Company, rivalry is stimulated among the various departments, by posting the record of their service reward by departments. Within each de-

partment itself a bulletin is posted showing the percentage of people earning service rewards in that department. To the department which makes the best record in a given week, a banner is awarded. This seems to have brought results. The man who loses his service reward is laughed at by his comrades, and continued absenteeism threatens his popularity. The success of any such plan will depend very largely on the way the banner is presented.

This centering of responsibility has so far been very largely in the department. In order to improve its operation, Strawbridge and Clothier adopted a plan of posting the names of those who were late more than twice in the same week, with the result that the ratio was still further cut. The Dennison Manufacturing Company sent out a series of absence slips to each department. On these slips are entered all absences, whether excused or unexcused. The slips are so arranged that no broken time can appear on an employee's clock card without an absence slip explaining this loss. The object was to make sure that all lost time was reported. With this record, tabulated each month, individual cases are taken up with the employment department. If a loss is due to an operative's home duties she is asked to correct it, or else to give up her position. This centering of responsibility by the posting of bulletins is an interesting commentary on the power of publicity.

Thus far, there has been no quarrel with the adage that the absent are always guilty. In a sense this is correct, for all these systems are based on the philosophy that the absent are guilty—guilty in the sense that absence is an individual matter over which a concern has no control. Herein lies the point of difference, for there is a control that can be and should be exercised by the employer. An ounce of prevention is said to be worth a pound of cure. We have just been discussing the pound of cure. The ounce of prevention is rather a new departure.

One of the first plans which has been put into practice has been the rewarding of punctuality and regularity by means of bonuses. These may take several forms. Some are purely cash, some are cash plus the added incentive of a vacation, some are simply tokens of one sort or another.

The Beacon Falls Rubber Shoe Company, in order to induce their force to be punctual and steady, adopted the scheme of paying a dollar a week bonus to any employee who turned in a perfect ticket

for a week. This had the result of reducing their absentee record by nearly thirty per cent. The Detroit Steel Casting Company gives a bonus of twenty-five cents for each working day during the payroll period. Thus if an employe works a thirteen-day period he receives a total bonus of \$3.25. This system has only been in use since July, 1916 and has not had time to prove itself. The company feels that it has done much to keep the men steadily at their jobs. At the Bridgeport plant of the International Silver Company they have instituted a service reward scheme, whereby the company pays 5 per cent of a man's weekly salary if he is neither absent nor late during the week. This service reward is paid four weeks after it is earned, providing of course the man is still in their employ. At the outset only 69 per cent of the force qualified for this bonus. At the present about 81 per cent qualify and the percentage of absence and lateness has been cut from 46 per cent to 33 per cent. It is perhaps well to bear in mind, in this connection, that labor conditions in Bridgeport have been about as acute as in any city in the Union. The bonuses mentioned so far have simply been cash payments.

Some concerns go even further. The A. M. Collins Manufacturing Company, for example, decided upon a premium of a week's vacation with full pay to every woman employe who during the year had not lost more than ten full days. The Saturday half day is counted as a full day. Absence is excused in cases of sickness if a doctor's certificate is presented. The company feels that while all the employes should have a vacation, the results are much more beneficial when the employe knows that the time he is losing is not costing him money. Forty per cent of the employes of this concern now receive a vacation with pay. The Leeds and Northrup Company give a bonus of a quarter of an hour extra each day, *i.e.*, an hour and a half a week to those employes who are on time every day. They also have a vacation plan, based on service. Any person who has worked with the company five years is entitled to a day's holiday with pay for each year he has been with the company. Thus a seven-year man will get a seven-day vacation with pay any time he chooses between May and September. The foremen and office force are allowed to take their vacations—and in their cases these days are extra for in any case they receive a two weeks vacation with pay, at such times as they see fit, a day at a time. This of course gives them a feeling that they are on their own time and not asking any

30
05
1.50

favor of the company. Over 50 per cent of the present force has been with this firm five years.

The Curtis Publishing Company, as a recognition of satisfactory service, based on unusually good attendance or promptness, gives out each year a series of tokens as awards. This may take the form of the original of a painting reproduced in one of its publications, or a set of books. In 1915, 850 awards were given out. One hundred and fifty-six of the force were neither late nor absent. Five hundred and sixty-three employees were not late during the year, and 92 had a perfect attendance record. Twenty employees of this concern have been neither late nor absent for five years. The Kerite Cable Company gives turkeys to many of its employees each Christmas.

Several other concerns, while they have no bonus system at present, are contemplating the establishment of one in the near future. The Dennison Manufacturing Company is contemplating to pay a bonus for perfect attendance over a period of six weeks. They expect to pay this in a pay week in which a holiday occurs, which would virtually give all hour workers a chance to pay themselves for each holiday simply by being present every working day. For this purpose the working year is divided into eight periods of about thirty-eight days each. The Hood Rubber Company also is considering giving a bonus, and many others have plans in the making.

Another factor, ranged on the preventive side, is that of home visiting. This method suggests both cure and prevention. It may be carried on as part of the work of the employment department, but is often done by firms which have no regular employment office. The first work of this sort was developed by the Ford Motor Company and was at first severely criticized, partly from the fact, as some one has pointed out, that this concern has the unfortunate habit of doing things first. But be that as it may, every morning the time department turns over to the investigating staff a list of absentees of the previous day. Each absentee is carefully looked up. The result has been that where formerly the daily absences totalled about 10 per cent, the number is now less than one half of 1 per cent.

The Cleveland Metal Products Company has found this system most satisfactory. They employ two nurses, one of whom stays in the dispensary while the other visits absentees. These

best report

nurses are provided with automobiles in order that as much territory as possible may be covered. The visits of one nurse cut down absentees in this concern from 5 per cent to 3.5 per cent, and by employing two nurses the absenteeism in 1915 was only 1.9 per cent. The Bamberger Department Store visits the employe in cases of sickness. Hart, Schaffner and Marx follow out this same idea, working through their medical department, and have found that one visit from the nurse, is in almost all cases sufficient to reform the unnecessary delinquent.

By no means all of such plans meet with entire success. We quote a paragraph from a letter from the Fisk Rubber Company—

The system we had in effect was satisfactory enough, but the principle evidently was wrong as the percentage of absentees was not cut to any extent. Our plan of operation required two nurses, two automobiles, with the necessary chauffeurs, and three clerks with the necessary supervision. After a while the men became very clever with their excuses, and as a matter of fact there never was so much bowel trouble and headaches since the world began. To much time and money are consumed by the endeavor to visit all absentees. I think the proper way to handle this would be through a labor tracer, etc."

The work of employment departments must not be overlooked as an element in the ounce of prevention. Many of these today carry on physical examinations which determine the physical status of a man before he ever takes a job, and then to maintain his fitness after he has come to work. The Joseph and Feiss Company maintain a physician, an oculist, and a dentist for these purposes.

Another feature of the operation of an employment department is the following up of the work of a man after he has taken a position. Thus the coupling of the right man to the right job relieves a great deal of that discontent which fosters so many industrial ills. Unfortunately it is not possible to measure discontent in figures; but it is obvious that a man contented with his job and surroundings is apt to work more steadily than one who is not.)

We hear a great deal in these days about "safety first." The application of this slogan to industry has meant the material cutting down of accidents, and this has meant the reduction of absences. For instance in two huge steel plants, of approximately the same size, plant A has used methods to prevent accidents, plant X has used none. In plant X, in the steel works, the number of days lost

per man over a period of three hundred working days is 16.9 per cent. In plant A this percentage is only 4.7 per cent. In the yards of plant X the average daily loss is 4.2 per cent, while in plant A it is just half that or 2.1 per cent. In this campaign of "safety first" the workmen's compensation act has been the largest single factor in the reduction of accidents.

The prevention of unnecessary fatigue has some bearing on our problem, as it avoids lateness and perhaps absence during the next working period. The Joseph and Feiss Company combats fatigue by a change of work at given periods. A certain machine company shuts off its machinery absolutely during a stipulated part of each day. But here again we simply have opinions and no figures.

The use of alcohol is an ever troublesome problem. Some firms refuse to employ a drinking man. In plants where there is night work and nearby saloons, it often becomes a serious problem to get the men to return to the shop on time when the work recommences, after the shut-down at midnight. To combat this condition the Philadelphia plant of the Barrett Company shuts down for only half an hour at midnight, this time being shortened at the other end. It then serves coffee to its employees free of charge. The result has been that of the seventy men who used to go out at this time, now only four leave the premises. It is possible that desirable lunch rooms within the factory would have the same effect.

Specific efforts to attack the problem of lateness and absence are things of such recent origin, that many of them seem of more theoretical than practical value. In attacking the problem, it is well to point out that it is not suggested that the personal liberties of any employe shall be interfered with. It is the avoidable and unnecessary absence and lateness that are the objects of attack. The difficulties of studying the general problem may be summed up in the following paragraph of a recent letter from a large silk mill. It is typical.

In reply to your request for information as to lateness and absence at this plant, we must state that while we are at present employing a time keeping system which adequately informs us as to these factors, we have not to date accumulated sufficient data to be of practical value to you in your present quest. If we could offer you our seasoned information a year from date, we should be glad to be of any possible assistance.

The nucleus of this and of many similar letters lies in the last sentence. With seasoned data, comes action, and from the present indications of this newer conception of the relations of employer and the employe, we take the liberty to assume that in this action, we shall find continued support for our second heresy, that the absent are not of necessity guilty and lessened evidence for our first, that the absent are not of necessity conspicuous.

CONCLUSIONS FROM A SURVEY OF OVER FIVE HUNDRED EMPLOYEES' BENEFIT ASSOCIATIONS

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The employees' benefit association is the result of evolution and has apparently come about through a desire on the part of the men to coöperate for their mutual benefit. Capital has but recently awakened to the value of these organizations in steadying the force and in reducing some of the unmeasured leaks of business.

No method has as yet been accepted as showing clearly the cost of absenteeism, or the loss of both quality and quantity of production due to workmen being harassed by debt incurred through sickness, or to dragging themselves around in an effort to fight off disease without proper medical attention. The presence of such losses is obvious on most casual consideration of the subject. Consequently, the only problems are those of measuring the amount of loss and of devising methods of loss reduction. We may utilize the employees' benefit association for the mutual relief of employee and employer from such conditions. This has proven one very effective means of reducing some of these newly recognized leaks.

Some employers for many years have been coöperating with associations among their employees. However, it is only in the last few years that capital can claim to have frankly acknowledged the value to the employer of these associations. Recently various stock insurance companies have been sitting up and taking notice of the possibilities for them in this new era which is developing. In addition to increased activity of the companies regularly writing sick and accident business, some of the larger companies are now offering group insurance through employers in such forms that premiums are paid to the insurance companies monthly by the employers. The entire cost is absorbed by some corporations in connection with their welfare work while others collect from the employees through the pay envelopes for part or all of the premiums. Some of this group insurance embraces life insurance only. As a stabilizer of labor, life insurance does not seem to me to embody enough of the

great essentials which attract the men. Any gratuity receives a welcome, but the money spent by an employer for life insurance premiums might be used in other ways to greater advantage to both employer and employee. Group health and accident insurance is something which can more readily be visualized by the average man and as a stabilizer produces more favorable results than group life insurance.

The greater the frequency with which a man feels the benefits derived from a gratuity or an investment, the more he will appreciate it. In an average working force of one thousand men, seven will die each year. In such a force then the group life insurance plan will demonstrate its value to the employees less than once a month and then very few employees hear about the payment of the benefits. In such a force of one thousand men someone is always either hurt or sick and frequent contact of the individual employee with the disability benefits is secured either through his being a beneficiary himself, or because he is serving on sick visiting committees or in other ways sees benefits going far to relieve his friends in times of need.

Employees' benefit associations usually operate without much overhead expense. There is some expense of operation but the employer usually pays it. He does not always realize it, but he pays it just the same. In some few cases the secretary circulates among the members collecting dues at regular intervals. It is probably safe to conclude that this is always on company time, resulting in relatively heavy cost to the employer. However, in most cases dues of the members are collected through the paymaster as an accommodation to the organization. This plan is far more effective for the association and costs the employer less than the former method.

Having almost no overhead expense, the association can handle business practically at cost and in many cases, through having outside income, for less than cost.

An employer, who is aware of the value to him of having all employees become members of their benefit association, may contribute toward the cost of maintaining the association and thus foster the organization operated by the men themselves, but his interest should not lead him beyond the point of cooperation. *The members should know that they are operating their own association.*

An employer's dollar spent in this way will go much farther than when part of it must be diverted from payment of losses to cover the overhead of a stock company. Stock companies have a wonderful field of usefulness but they are by force of circumstances unable to compete with the employees' benefit associations.

No form of insurance will sell itself. In associations operated by employees without the coöperation of the employers the percentage of members to total number of employees varies from two per cent upward, the average being about thirty per cent. In cases where the employers coöperated in jointly managing the associations the average was over sixty per cent, and where the employers managed the associations alone the average was over seventy-five per cent. This points to one very important moral, and embraces one of the essential features of organizing such an association. In addition to that, it shows very forcefully the need for reorganizing a great many of the associations now in existence. Consequently, I believe those features which are essential for organizing will be equally essential when reorganizing an association.

This was the condition that confronted the Dodge Manufacturing Company's mutual relief association two or three years ago. The association was about to celebrate its twenty-fifth anniversary. The corporation had maintained the attitude of allowing the employees absolutely a free rein. Some of our directors, felt very strongly on this subject. The result was that in attempting to allow the employees to exercise their own judgement without interference from the corporation, we were, in reality, depriving them of the counsel and benefits which they might receive from directors and officers. Efforts had been made for several years to urge the officers of the benefit association to campaign for new members, and quite a little stimulant was thus administered. The membership continued, however, with slight fluctuation, to include between thirty-five and fifty per cent of the employees. It seemed quite evident that something was lacking; that this proposition must be studied just as any other problem of product, equipment or labor. We set out to do that, making up a questionnaire which went to a number of corporations who we believed might be operating benefit associations. We made notations of the various problems that suggested themselves, and which we then set out to solve. It developed that we had seventy-two problems for the solution of which we must secure

data. We found that the department of labor at Washington could give us a great volume of data from which we were enabled to compile percentages and other figures to aid in solving these problems. This, together with the information received in answer to our questionnaire, gave us considerably more data than we had anticipated when we started out.

Statistics themselves avail little in the brief consideration of so important a subject; suffice it to say that data were secured covering approximately six hundred benefit associations, and copies of the by-laws were received from seventy-eight. We digested them as best we could. For convenience in studying the various by-laws, we cut them up, and where necessary made digests of the individual provisions; so that, by means of a card file, we were able to gather into one group the various provisions for handling the numerous situations that arise, such as the duties of officers, amounts of benefits, and administration problems generally. From this card file we compiled a set of by-laws which were then submitted to the members of our own association, who were asked to appoint a committee to go over the matter thoroughly. This committee, representing the different departments in the plant, met on "company time" one afternoon a week for about three months, with the result that our present by-laws include what, to that committee, seemed to be the best features of the seventy-eight.

Thus, the corporation was of benefit to the association: first, in securing for it this volume of data that it might reorganize: second, we were able to show it that above all its plan must be attractive. The association is in the business of selling insurance; it must have a proposition which can be readily sold to the employees. We were able to show it some of the psychological features of the proposition, not through a definite study of psychology, but by bringing the members to see the effect of certain methods of procedure on prospective members. One point was kept forcibly in mind continuously: *The entire plan of reorganization must be above suspicion.* There must be nothing about it which would permit the suggestion, by those of perverted mind, that the corporation had any motive other than the best interests of the employees. *All decisions were to be made by the employees.* We took pains to place before them, however, all of the facts, both for and against each proposition on which they were to ballot, so that they were benefited by the experience

and judgment of those who had experience in insurance matters and sales promotion, and in addition, the facilities for securing information.

One point stands out forcibly: *No matter how good the plan, it will not sell itself.* It must have barbs on it; it must not work too smoothly. There must be things happening to keep alive the interest and enthusiasm of all the members. It is not sufficient to depend upon the secretary or any other one man to secure all of the members; all employes must be warmed up and kept warm so that a new man coming into the plant will immediately feel that influence and *want* to come in.

Instead of making outright donations to the treasury of such an association, it is far better to offer bonuses to the members for the accomplishment of certain definite results. Gratuities never develop the enthusiasm which follows sustained effort made to reach a certain goal and to earn a bonus or prize. Convert the campaign for members into a game wherein each member may become a salesman watching for an opportunity to get a new employe into the association. The effect of enthusiasm may be seen in the fact that the membership of the association in the plants of the Dodge Manufacturing Company doubled in the month following the adoption of the new by-laws.

A number of different stimulants were tried for the effect upon both members and prospective members, as evidenced by the percentage of employes in the organization. Our biggest stimulant so far has been that of dividends. We brought to the attention of the board of directors of the employes' benefit association the fact that their treasury was increasing very rapidly; that it was unfair to the members to retain this money when it was not needed by the association; that they could and should declare a dividend equivalent to two weeks' dues. There was considerable hesitation, however, for fear that the soundness of the organization might be jeopardized, but, upon thorough consideration, and at the recommendation of the officers of the corporation, they agreed that it looked perfectly safe. To save bookkeeping, this dividend was declared in cash. Each member received an envelope containing his dividend, and bearing a message stating that the organization was quite prosperous; hence the dividend. The amusing part of the experience was that the membership went up about fifty per cent in the next six months,

and the initiation fees from this influx of new members put into the treasury more than the dividend had amounted to. Thus the organization not only got its money back, but increased its membership fifty per cent. However, the greatest value came out of the fact that after the first dividend was paid, as a surprise to the members, the solvency and soundness of the association were most emphatically impressed upon the minds of all the employees.

Successive dividends seem to be accepted more as a matter of course. Nevertheless, demonstrations of strength and solvency must be made at intervals to keep up the enthusiasm. This will extend the influence of the association into the furthest corners of a plant.

As pointed out previously, it is very evident that the management of such an organization should not be left entirely to the employees. However, I do not favor a management exclusively of the corporation. In my opinion, a joint management should secure the counsel of the officers of the corporation, and the interest, enthusiasm and experience of the employees; thus the organization is operated for the best interests and secures the greatest enthusiasm of all concerned. The average executive being of the individualistic type, does not clearly comprehend the viewpoint of the general employee who is of the collectivistic type. In my opinion, the joint plan of management is by far the best solution.

To revert to the discussion of ways and means of the employees' benefit association in general, some by-laws of other organizations provide that one-half of the board of directors *must* be appointed by the corporation; the other half by the employees. I believe it would be better to provide that "*not more than one-half of the board of directors shall be appointed from the corporation officers.*" In fact, I prefer to say nothing about this phase of the matter, allowing the entire situation to rest upon its merits. The men will be very quick to know who among the officers of the corporation are with them and competent to advise them; and it will be noticeable that there will be no attempt on the part of the men to "railroad" anything through, provided that the corporation officers who take an interest in the work, are with them and keep their ear to the ground.

Some one to serve as an actuary should prove valuable in keeping an association on a sound basis. One familiar with insurance problems who is interested in piloting the organization may

well be selected and held responsible to the association for the business policy. Such a man may be found among the executives of the corporation. Another extremely important individual is the secretary. He should be elected by popular vote and like the actuary should be recognized primarily as representing the interests of members. The employer may indicate a willingness that these men devote the necessary time to association activities but the final choice of individuals should rest with the members.

One thing that struck me very forcibly was the desirability of voluntary membership. I found by investigation that in some of the organizations where membership was compulsory for employees, interest was absolutely lacking. The officers of such an association very soon become dictatorial in their attitude, and so far as I have been able to observe, the members in most of these organizations look upon membership as a burden which they must carry in order to hold their jobs. Thus the value to the corporation was absolutely lost, and while it had a value for the members, they could not see it, and, therefore, it ceased to exist for them. There may be some compulsory organizations that are not subject to this criticism, but I have my doubts.

After the reorganization of the association in the plants of the Dodge Manufacturing Company, no old members dropped out but the new ones were of lower ages. This decreased the average age. Where the peak of the membership curve had been at forty-one to forty-five years, it moved down to twenty-one to twenty-five.

It is generally considered that sickness may be greater among the higher than among the lower ages. A set of charts is now being prepared, which will show for the various age groups the relation between membership and the number of days off due to sickness or accident and the number of cases of each. Indications lead to the conclusion that some of my previous ideas may be upset.

An important feature is that of "waiting time." The charts which I have prepared on this point show that the bulk of disability cases are of short duration. The cases of six days' duration form sixteen per cent of the total cases of more than three days' disability. I believe that it would not be feasible to pay benefits for disability of less than three days; first, because of the high cost, and second, because an employee who is at all provident will have no difficulty in financing himself for a three days' sickness.

Much discussion was given to the matter of the total amount of disability for which the employees' benefit association should pay. The most popular selection was thirteen weeks. Some pay for twenty-six weeks, while others have different provisions. As an illustration of some of the features developed by the charts I have prepared, we shall assume uniform dues of ten cents per week for sick benefits. With three days' waiting time, it is possible to pay benefits of one dollar per day for thirteen weeks. If the waiting time were increased to seven days, the benefits could be increased to nineteen weeks without any change in the dues. If the waiting time were made thirteen days as in most compensation laws, the benefits could be paid for twenty-six weeks. This shows the effect of waiting time and the relation between waiting time and the duration of cases.

Many employees' benefit associations provide what might be called "step-down" benefits. That is, \$1.00 a day for the first thirteen weeks; seventy-five cents a day for the next thirteen weeks; fifty cents a day for the next thirteen weeks, and twenty-five cents a day for the balance of the twelve months. Others pay small benefits as long as one lives and continues disabled.

I have prepared a number of very interesting charts on these benefits and rates. For example, step-down benefits throughout fifty-two weeks mentioned above of \$1.00, seventy-five cents, fifty cents and twenty-five cents, would require dues of a trifle less than fourteen cents per week per member—other combinations in about that proportion. If it was desired to extend these benefits as long as disability continued, it would be necessary to add only two cents per week per member. These rates are based on a factor of safety of one-third. In other words, experience should not exceed two-thirds of the rate. This, however, is a necessary provision due to the fact that the statistics from which these rates were made are taken from the Dodge employees' benefit association, and checked up against the rather crude figures compiled from the statistics of six hundred organizations. They appear to be perfectly safe. I very much favor the step-down benefits, but experience has shown that it is difficult to bring the employees to realize the advantage of providing for a long-time sickness. They are all so cocksure that continued sickness will only be experienced by the other fellow.

There are two methods of collecting revenue. One plan is

by levying assessments. Psychologically, assessments are wrong; dead wrong. It is true that no matter how you collect the money, the amount needed is essentially the same, but to the average mind, an assessment plan seems to be always working over time. The men imagine that they are paying twice the amount that is really being collected, and that the assessments come twice as often as the facts really show. Regular dues at regular intervals are much more satisfactory from every standpoint. A member knows months in advance just how much his dues are to be and when they are to be collected. Therefore, he is never surprised when they are deducted from his pay. In settling upon regular dues, it is naturally necessary to make these dues sufficiently large to take care of the fluctuations in benefits in order that the treasury may be kept intact, and the need for assessments eliminated. Experience shows that the fluctuations in benefits are not extreme; and with a fair-sized treasury, the organization is able to navigate successfully with dues very slightly in excess of average requirements.

The question of dues appears to be a difficult problem, but in reality is comparatively simple when one has access to the charts prepared on the subject. The logical method is to first settle upon the benefits that are to be paid, and then compute the necessary dues to secure these benefits. It makes a big difference whether all members pay the same dues, or whether one member may select benefits that suit him and pay dues accordingly. For instance, the dues above quoted, or step-down benefits, are based upon a plan whereby all members of the employees' benefit association pay the same dues, or, in a large organization, at least enough of the members pay dues on a uniform plan to provide a satisfactory average experience. Stock companies writing sick and accident insurance policies find a policy paying \$1.00 a day benefits with a premium of \$1.00 a month a ready seller. This furnishes us a guide upon which to work, although I have found it operates better to quote rates in terms of weeks. The amounts look smaller, and the average employe is in the habit of thinking in terms of his weekly wage. It is, therefore, desirable to employ a language which he can readily understand. Ten cents a week seems to be quite popular, although our experience shows conclusively that the men do not hesitate to pay for anything in which they see value.

Another extremely desirable feature of this organization is

that, according to the by-laws, the organization may do anything to promote the general welfare of its members. Under this provision, the association organized a thrift club. In this thrift club any employe may authorize the association to deduct from his weekly pay any multiple of twenty-five cents. This must be left in the association treasury for at least fourteen weeks; if left twenty-six weeks or more, it will draw four per cent interest. This interest, like the dividends, for psychological reasons, is paid in cash and not credited to the account. This acts not only for the employe's benefit, but as the following incidents will show, is of great value to the corporation. When this thrift club was first started, the secretary of the Employees' Benefit Association made it a point to visit all of the spendthrifts throughout the plant, making a special campaign with them first. Man after man declared, "If the company will raise my pay, I will be glad to go into it, but I can't live on my present wage, let alone allowing you to deduct anything for your thrift club." Each of these fellows was appealed to further; he was urged to allow twenty-five cents to be deducted from his weekly pay on the grounds that the secretary wanted the moral effect of his name to influence other fellows who needed the benefit of such a plan. All of these said that they believed in the plan and were finally induced to lend their influence that way. As the weeks progressed, the secretary made it a point to see these fellows whose wages were "inadequate" and casually impressed them with the fact that this amount was climbing. This, coupled with the thought that they had induced so many others to join the thrift club, brought about the result that they volunteered to double the amounts until, within ten weeks, not one of them was saving less than \$2.00 a week; some as high as \$10.00. Before the fourteen weeks are up for any thrift member, the secretary makes it a point to see him and ascertain what he proposes to do with his money when he gets it. One of the fellows who had been most enthusiastic in the contention that he could not live on his wage, said that he was going to have something that he had never before had in his life, and that was a bank account. Another fellow said that he had been married for fifteen years and had been head over heels in debt all that time, and that he was going to spend \$15.00 of his saving for new clothes for his family, and that the balance would pay "every debt he had on earth," so that by continuing in the thrift club he would be able

to "look everybody square in the eye," and keep out of debt in the future.

The corporation benefits in all of this from the very valuable fact that these men, who formerly considered their wages inadequate, have demonstrated to their satisfaction that it was not inadequacy but carelessness that had prevented them from saving money.

One case is interesting; one member had accumulated \$50; his fourteen weeks were not yet up, but his wife was operated upon, and the doctor's bill was \$64. The doctor told him that if he would "scare up" the cash right away, he would make it \$50. He came to the secretary almost breathless to see if he could get his \$50. It was gladly given him, and he saved \$14.

The boys are saving through this means to get married; for winter clothing; for coal, and all sorts of things they want and need, including, in one case, a Ford. The man who saved for the Ford is the warmest booster we have.

A man who is proud of the employes' benefit association or of the thrift club, or baseball team, or band, must unconsciously have a good regard for the plant and organization behind it; which, barring irritation of some form to disturb the situation, will build for a low labor turnover.

WHO IS BOSS IN YOUR SHOP?

BY MORRIS LLEWELLYN COOKE,

Consulting Engineer, Philadelphia.

The European War has developed into a high-powered advertisement for community organization, for the scientific in management and even for capacity in the individual. Notwithstanding much that might be cited to the contrary, our great national desire is to be efficient in both government and industry. Individually and as a people we are almost relentlessly seeking the bases of such Efficiency; and we use the word capitalized as a synonym for the maximum of considered well-being. This can be affirmed notwithstanding what appears to be the most conspicuous fact in our current industrial development, *i.e.*, that more and more our people refuse to be efficient beyond their own desires. As the late Robert G. Valentine expressed it—perhaps a bit more emphatically than is warranted by developments to date—"the days of compulsion—the days of service without consent—are over. . . . In all those areas of life wherein man deals with man great breaches have been made in the ranks of compulsion." But it would be a great mistake to assume either that this greater liberty of action demanded by the individual necessarily makes for inefficiency or that it acts as a challenge to individual as opposed to group leadership.

Apparently the New World has little to gain from any blind copying of foreign models in this matter of industrial organization and control. German efficiency both in government and industry depends on a philosophy absolutely inconsistent not only with American traditions but with American ideals. In view of the virtual abandonment "for the period of the war" of the fabric of industrial practises and mechanisms built up in Great Britain during two generations largely by the labor unions, we are warranted in viewing what *was* the British industrial system with something more than suspicion. Are we not warranted in the belief that there is in the making in America a scheme of direction and control both for government and for industry vastly more efficient and at the same time vastly more democratic than has heretofore been deemed possible?

SOME ASPECTS OF AMERICAN SUPERIORITY

American life has a decided advantage over that on the continent or in Great Britain in the more numerous points of contact between groups—if indeed there is not with us a more genuine understanding between classes. Then, notwithstanding much that at times seems to argue against it, is there not among our people a deeper response of the individual to the Authority within himself than is to be found among other peoples? With these two points in our favor and when as a nation we have grasped more completely the significance of that union within industry of science and coöperation which we call scientific management, may there not be brought about an American efficiency—at once an expression of the individualism of our forefathers and the vehicle for our more recent collective aspirations? The sanctions of this system will not be militaristic as are those encountered even on the industrial side of German life. It will avoid the pitfalls of that type of group action which is so largely responsible for “muddling” in the United Kingdom. And we have the right to expect that pervading its every activity there will be something of the spirit—the *élan* of the France of our dreams and of present-day realities.

We Americans cannot put our trust in the much heralded German efficiency for it gives us a kind of science but no genuine coöperation. Science without coöperation is a relatively lifeless thing. America's high calling is to prove for our common humanity that there is a method of production growing out of individualistic leadership coupled with an essentially democratic control which is not only more conducive to race-happiness but which in its very nature is scientific and is designed to outstrip any system which is the outgrowth of a military or an autocratic régime such as is found in Germany. Military efficiency, it must be remembered, consists largely in the ability to mass the greatest possible strength at a given place at a given moment. Industry on the other hand struggles rather for steady performance. Peaks or depressions in either demand or output in industry are to be regretted. The “supreme moments” of the battlefield are taboo and even spectacular campaigns rarely result in permanent improvement.

THE MOVEMENT FOR INDUSTRIAL DEMOCRACY

We can admit that the movement for industrial democracy in this country in its more obvious aspects has been largely away from rather than toward science and coöperation. But there are reasons for believing that the organized labor movement in the United States must in the near future dig itself in along a front somewhat different from the one it has occupied in England, and by reflection in this country, for a generation or two past. Some at least of the faces of this new formation seem reasonably clear.

Two men having formed a partnership may adopt any one of three plans for the conduct of the enterprise. One of the partners may be put in supreme command, expressed or understood, or all matters of moment can be decided by joint action, or there may be an assignment of function as between the two partners so that one is supreme in say selling and finance, while the other has the final decision as to manufacturing. This is a statement in very simple terms of a problem common to all management. Upon the relation thus established between the individual and the group depends the conduct of a city or a nation, of a single manufacturing establishment or of an industry.

A partnership of two men is admittedly a simple form of human coöperation, but immediately the question of individual versus group direction and control presents itself. To enlarge this group from two to the hundred millions of population in the United States does not alter the underlying philosophy or interfere with the scientific determination of the proper field in which group and individual action should each operate.

Government began with the unhampered will of the strongest single individual and under democracy's warming influence has broadened out until larger and larger groups eventually control political action. In this transition from a régime in which the administrative program of an individual was enforced by the selfsame individual, to the present time where in matters of government—if not of industry—all administration is supposed to find its warrant in the consent of the governed. We have not always made the sharp distinction which appears necessary between the administrative code itself and the authority which vitalizes it into action. The democratic ideal would appear to be administration by indi-

viduals with collective pressure when necessary, rather than too much insistence on the part of individuals.

SOME RECENT POLITICAL AND INDUSTRIAL TENDENCIES

Recently there has been noticeable in the political thinking of the United States a demand for at least a partial return to administrative individualism as evidenced by movements favoring the short ballot, the city manager, longer terms for administrative officials, centralized responsibility, smaller legislative bodies, and the substitution of judicial decisions for those of juries in certain classes of litigation. In our political democracy we are beginning to admit that efficiency comes through giving authority to individuals and requiring performance from them. The initiative, referendum, and recall are simply some of the checks and safeguards which are essential parts of this scheme of management in its application to government.

Scientific management stands for the same tendencies in industry. It recognizes that one fact may invalidate a hundred opinions. Scientific management seeks to set off the territory in which, because the facts are obtainable, action can be determined by the facts rather than by caprice. A fancy, whether it be the fancy of one or of a million, is still a fancy. We cannot vote a fact. Action by opinion ebbs and flows while action based on the facts can be reasonably consistent and permits of logical and continuous growth. The truth does set us free.

In our scheme of industry and of government the distinctions between these two territories—one of law and the other of judgment—will become more apparent. Collectively we shall gradually learn to trust individuals to read the facts. We may in time class many of these individuals as experts and ultimately revere them. Nor need we abandon the scheme because we are occasionally betrayed by misjudged abilities and limited vision. On the other hand the democrat will not be asked to *vote* once a year on town clerks or minor bond issues. Rather each hour in the day in industry and in life he will render his judgments made all the more necessary in a world broadened by the discoveries of science and deepened through our quickened insights and appreciations.

LABOR UNION ATTITUDE DIFFERS

While the tendencies in our political democracy seem to be in the direction of a larger degree of individualism, certainly in that part of the labor movement which has become organized no such drift is as yet to be observed. According to what appears to be the code of the labor unions and of some of their most distinguished advocates the most satisfactory way to settle almost any given question is to vote on it. If by its very nature it cannot be voted on it must then be deprecated. Democracy and voting are, under this dispensation, synonymous terms. It may be easy to prove that the leaders of the American Federation of Labor do not hold to this very consistently as a general philosophy of life but nevertheless it colors most of the relations of organized labor to the public. In fact the growing demand for what has come to be known as "consent" under the most frequent interpretation seems to involve a maximum of *group action* rather than a maximum of *action by individuals*. "Consent" as nearly as I can make out involves a much broader application of the theories underlying collective bargaining. Our activity and loyalty even in minor matters is to be secured only after a collective measuring of the pros and cons.

The collective bargain has found its field principally in the agreements between individual employers and their employes and has concerned itself largely with hours and wages and only secondarily with the other conditions surrounding employment. "Consent," on the other hand, seems to involve much broader relationships of the group which work for wages to government, to industry and to society. The relatively primitive struggle for higher wages and shorter hours gives way in a sense to a struggle for standing. Minor claims such as those for compensation on account of injuries are superseded by a claim to a share in the conduct of the business whether it be a manufacturing establishment, an industry, a city or a nation. I am picturing this widening of the front of the labor propaganda not because I lack sympathy with it but only to question the one phase which puts a premium on group administration and group decisions.

It may seem axiomatic that because in working out our political democracy we have been in the habit of expressing through the vote our collective pleasure on all kinds of matters—questions of judgment as well as questions of fact—that therefore we must necessarily pass through a similar period in working out our industrial

democracy. But possibly we in America can, because of our growing respect for science and our dedication to coöperation, work out a system by which those who work with their hands and their heads and those who represent property interests will each have their proper share in the conduct of industry and in its rewards and this without the necessity of resorting to a vote on the length of a mine car, the proper shovel load for a day laborer or the use of instruments of precision such as the stop watch.

SIGNIFICANCE OF THE DEMAND FOR "CONSENT"

The growing demand for "consent" as voicing a natural reaction against a too autocratic control in industry is to be welcomed without any reservation. But if "consent" necessarily implies an unwillingness to follow the individual—except after a vote—and substitutes everywhere group action, we will most certainly have stepped from the frying pan into the fire. For it is only through individuality in management that we guarantee to society the maximum of production and bring to each worker the largest possibility of joy in his work and, more important still, keep free the human spirit for those adventures without which it were better that this old world of ours should grow too cold for human habitation. As Robert B. Wolf has said, "*the function of the group* should be the greatest possible amount of freedom for the development of the individual." Industrial democracy has forged the collective bargain to act as one check against the excesses of individualism. But we must be careful lest the check be used, as some of our political checks have been used, to destroy all chance of positive and strong and timely action.

One of the principal indications of an impending shift in the front of the labor movement in this country is found in the fact that many of labor's foremost spokesmen admit that in increased production lies one of the most hopeful routes to a higher social and economic status for those who work with their hands. In several recent reports—largely influenced by the American Federation of Labor—where this question of the effect of increased production was distinctly raised, labor's representatives refused to oppose increased production as such. This is a far step from the "*Ca canae*" and "soldiering" recently and openly advocated and practiced. The laboring classes were of course partially forced to such resorts

by the attitude of boards of directors in refusing to administrative officers the right to pay to especially proficient workers high wages—or at least to pay wages much above the district scale.

Scientific management stands first, last and all the time for increased production. But production is interpreted in the broadest fashion as including everything that makes for human happiness. Thus Marshall points out that art and even the concepts of the mathematician may be production in the very highest sense. Scientific management holds that equal opportunity and liberty itself are aids to production, that poverty is unnecessary and that labor does not even approximate being a commodity.

Anyone who doubts whether this matter of "consent" is to be pressed should read recent articles on the subject which have appeared during the last few years in some of our leading periodicals¹ over the signatures of Justice Louis D. Brandeis, Minor Chipman, the late Robert G. Valentine, John P. Frey, secretary of the Iron Moulders Union, Felix Frankfurter, Robert Bruère, and the late Robert F. Hoxie. One finds of course even among this group of writers considerable variety of opinion as to the means which it will be wise for the laboring classes to use in giving voice to "consent." But no one of them apparently has much faith in the possibility of a fairly rigorous individualistic administrative policy that is to be protected and even induced under group control.

This whole question has been brought to a focus recently through the passage by Congress of legislation absolutely prohibiting premium payments and the use of the stop watch in several important branches of the government service. At the last session strenuous efforts were made to broaden the field for this legislation so as to include all classes of government work. Of course these are only preliminary skirmishes in a legislative campaign, whose real object is to forbid the use of these aids to a genuine science of industry in all establishments having government contracts, and finally to include industrial establishments generally.

At least one large national association of artisans—the electrotypers—have recently established a uniform selling price for the

¹ See especially the discussions in the *Bulletin of the Taylor Society* to promote the science of management. Dr. Harlow S. Person, Dean of the Tuck School of Dartmouth College is president of the Taylor Society and H. W. Shelton, Hanover, N. H., is secretary.

product on which they work. With both the wages to be paid by the employer, and the prices which he may charge for his product fully determined by group action and virtually by the organized labor group, it will be admitted that a radically new industrial situation will have been created. The field for "consent" will have been materially widened.

Everyone seems convinced that we are on the threshold of some very considerable readjustments in our American industrial world. It is entirely possible that present tendencies may become emphasized. But it seems equally possible, that organized labor will in the immediate future discover the futility of some of the remedies which are being pushed today with the utmost enthusiasm—administration by groups rather than by individuals among the number.

Perhaps the most obvious mechanism of group action in industry, as it is in government, is the committee. My views on committee management have been fairly adequately expressed in *Academic and Industrial Efficiency* published by the Carnegie Foundation for the Advancement of Teaching. But there are two additional points that should be made. In almost every instance which has come to my attention in which a committee in a factory was supposed to have full responsibility it had in reality very little. A shop committee has responsibility only when it pleases those who hold the purse strings to let it have its way. A committee may decide 999 things out of 1,000, but the fact that the members of the committee are kept from deciding the last one, and of course the critical one, keeps them from having the same kind of responsibility which the owner of a business has. Authority with such a string to it is not what is really meant by "consent." Employers should not flatter themselves that workingmen confuse committee control with genuine industrial democracy. It is of the essence of democracy, whether political or industrial, that it shall be motivated from below and not dictated from the top.

LIMITATIONS IN APPLICATION OF "CONSENT"

Under any reasonably modern or discerning attitude toward industry it must be conceded that in those things we do and in which we ask the worker's coöperation we must have his permission or "consent." But care must be taken to see that in freely granting

this contention we do not appear to be advocating something that is unthinkable. No surgeon, for instance, would operate on Samuel Gompers for appendicitis without the latter's permission. But once having secured Mr. Gompers' "consent," no reputable practitioner would permit him to dictate as to instruments or methods. In thus placing himself in the hands of this type of expert, surely Mr. Gompers does not feel that he compromises in any way his independence.

All workers from the top to the bottom are entitled to essentially the same treatment and consideration. I wish the opportunity to say whether I will or will not. I cannot logically deny this to anyone else. Nietzsche says, "Whoever has inflicted upon you the law from without has degraded your moral individuality." It is not desirable to have a man do a thing merely because I tell him to do it. Obedience is rather a primitive virtue. I wish my associates to assume that I am sincere in wanting them to do only those things which they elect to do after as full an acquaintance with the facts as the conditions under which the work must be done makes possible. It very rarely occurs that things fail of the doing on account of this attitude. In other words, "consent" may be interpreted as something larger than the opportunity to vote on each individual problem. Perhaps someone asks what we are to do with the so-called malcontent and kicker. An inquiry as to why such a one is discontented might develop the answer to the question. But even if it does not I am not sure but that any workshop is better for an occasional disgruntled employe. They are not so disposed every hour in the day. The task of winning them puts everybody on guard. One or two cats are not undesirable in a workroom, although it will be admitted that too many members of the feline family might interfere with the even flow of the work.

Is "consent" in reality always a collective matter—does it always involve group action or can it on occasion become a matter of the individual entirely? May we with safety allow this individual "consent" to apply broadly to a field involving not one, but an indefinite number of decisions? Similarly may it not be possible to make individual "consent" operate not only for the moment but throughout a period of time during which many decisions will be reached? These do not seem to be concessions antagonistic to a proper self-respect on the part of the individual worker nor to the

solidarity of the working classes nor in fact to the maximum of industrial freedom and democracy. But these conditions are vitally essential if we are to develop genuine American efficiency. Each day the discoveries and developments of science make the opposite course increasingly unthinkable. It is hard enough today to keep pace with the possibilities of progress with functionalized management, which of course means the leaving of final decisions in each function to one man rather than to a group. But in the immediate future it is going to be very much more difficult. You will recall Mr. Taylor's prophecy that within two generations there would be 50,000 books on industry for every one we have today. Hugo Münsterburg says in *Psychology and Industrial Efficiency*: "In a large manufacturing establishment the manager assured me only recently that more than half a million different acts have to be performed in order to complete the goods of that factory." This may have been an exaggeration but I know of no industry where the operations are not in the hundreds of thousands. To hold that we can permit every move in an industrial plant to be submitted to a vote simply shows a lack of understanding of the game of industry.

PROPER RELATIONS BETWEEN THE GROUP AND THE INDIVIDUAL

The cause of popular rule in this country and elsewhere seems to depend upon the correct decision as to the broad question of the group versus the individual. The system demanding one king gives way to a system of many kings—kings of the counter, kings of the lathe and loom—all kings, but only by virtue of superior knowledge. They *know*. But the reign of each is dependent upon the general acceptance of the individual's right to decide on facts and conditions. Our progress, and even our security, seems to lie in having the vast majority of judgments rendered by the informed individual.

Should we not learn in every relation in life to follow the lead of the particular individual who is charged with any given function, whether he be the President of the United States, the traffic officer, or the clerk in the office? We must not only follow these leads, but use our influence to have others do the same. On the other hand, should we not train ourselves to perform one or more functions so efficiently as to command the respect and loyalty, and reasonably willing service of those upon whose support we are dependent for success in the accomplishment of the work in hand—

the earning of our livelihood and whatever success we are to achieve. I personally wish to live in a world where it is possible for me to conduct myself along these lines and in which everybody else shall have the same opportunity. This will never be possible in a world run by shop committees or determining boards, or by labor unions, especially if the latter are so organized that everything has to be decided by group action. Both as affecting the individual and the nation, the developement of real democracy depends upon utilizing the high power of individual action, coupled with all the safeguards that can be erected through appeal, investigation and review, and the freest possible publication of results, with the final action based on the judgment of the governed.

I do not wish to have any misunderstanding about my attitude toward the responsibilities and the rights of individual employees. I believe that the *most important function of management* is to develop within the factory an educational system designed to get every employe "going from within so that he will run himself," in order that he may gradually assume a larger and larger share in the general conduct of the business. "We want all along the line," to quote H. B. Drury, "not only men who can do what they are told to do, but men who can do things we would never think of ourselves. We want men who have enough interest, and education, and experience and boldness, to make positive contributions to the intelligence and vigor of the work." This requires something more than lip service and hand service. It means head service and heart service.

To ask committees, however, to pass constantly on matters about which by the very nature of things they can have at best a minimum of information, is like giving unbridled liberty to a boy because you want to make a man of him. It is demoralizing to any man to be given the opportunity to deliberate and to decide on matters when he is without sufficient education and special preparation and an adequate fact basis, for a scientific decision. I believe in advisory committees, but in each function of the administration the final decision must be made by the individual. Nothing must prevent the individual from making decisions whenever in his judgment the time to decide has arrived. Decisions must be open to the fullest possible investigation and review, followed by a reversal of the decision if the facts reinterpreted so dictate.

There is one fact connected with industry which requires special consideration. Very few people, either in the labor ranks or out of them really wish to assume or are able to assume broad responsibilities. The work of the future will be to teach people to be eager to assume responsibility and to coöperate effectually. And this cannot be brought about unless the worker is inspired with joy in his task. Hereafter the Captain, whether of industry or of government, will necessarily be the man who loves, and loving, understands, and understanding, builds and leads and inspires great numbers of his fellows.

WEAKNESS OF COMMISSION REGULATION OF INDUSTRY

Since the discussion of the eight-hour day for railroad employes became acute, we have heard a good deal about the possibilities of relief from such situations through wage boards and industrial commissions. To advocate any such regulating agency in this field at the present time is simply to say "Let George do it!" It is not a solution. Let me quote four typical and random paragraphs from recent orders² of the New South Wales Industrial Commission to give you an idea how industrial regulation by commission works:

- a. If the work required of them is not in accordance with the general custom of the trade, and is not covered by the definition in clause 8 of the award the drivers cannot be compelled to do the loading and unloading.
- b. The rate prescribed for a driver of an engine with a cylinder under 12 inches in diameter is 1s. 4½d. per hour. Nothing extra need be paid to a driver who is required to clean windows, etc., but the rate mentioned must be paid in any event.
- c. An assistant is an employe other than a pastry cook, packer, apprentice carter, or motor-wagon driver as above defined and who does any or all of the following work, *viz*: bring in raw material; wash, clean and grease pans, tools, tins, and other utensils; clean and wash machines; label tins and boxes; wash and sugar goods; wrap cans and pastry; crack eggs; clean fruit and cut peel; put on and take off peels; attend reel, traveling and draw-plate ovens, provided that a journeyman is in charge; place goods into and take goods from tins, trays, pans, trucks, racks, bins and cupboards, before, during and after the manufacture; pack goods in bakehouses; clean bakehouses, yards and premises, feed and take from machines, put on and into and take from tins, trays, and pans any goods in any stage of their manufacture; top and bottom pies.

²The *New South Wales Industrial Gazette* issued (monthly) by the Department of Labor and Industry, Vol. X, No. 4. August, 1916. Pp. 685, 721, 845, 872.

- d. Men working in wet places are to be paid 1s. per day extra irrespective of the time so engaged. *Note*—Such wet places are to be determined and declared to be such by the employer and employe by mutual arrangement. In the event of the parties failing to agree it shall be referred to the chairman of the board for his decision.

It should be a matter of deep concern that except for the labor unions there are almost no routine agencies in American industry through which may be obtained an expression of shop opinion—individual and collective. The typical employer claims that he knows what his men think. But as a matter of fact it is as impossible to get the real attitude of mind of a worker or a group of workers from the employer as it is from the labor leader. The machinery through which complaints can be safely made and shop justice gradually established is yet to be devised. As new problems will always be coming up, the settlement of present ones is first of all necessary. The struggle must be to keep at a minimum matters on which debate is desired. The effort must be to anticipate any proper demand of an individual worker or group of workers as to hours, wages, or anything else. To plan for this kind of thing is the function of the highest officers of a company. The average foreman is too preoccupied with the day's work to do it.

COÖPERATING WITH THE LABOR UNIONS

The labor unions have for years been quoting Carlyle in using the words "Organize, organize, organize." Without going further they are misquoting him. However, when Frederick W. Taylor wrote *Coöperation* into the world's industrial creed and into the mechanisms of industry, he altered—and to an extent weakened—the argument for organization as this has been practiced by labor unions in this country and more especially in England.

To admit a labor union to a plant not previously unionized or to go through the forms of coöperating with one already there does not necessarily mean coöperation in the sense in which Mr. Taylor used it. Sometimes it is easier to admit a union than to keep it out. Again it may be easier to appear to coöperate than to reveal an actual attitude of opposition. The fundamental test is not whether you have unions or do not have them. In some sections of the country and especially in the larger industrial establishments the complete absence of unions would indicate something peculiar in the man-

agement. It is equally true that most manufacturers having unions and taking credit therefor are claiming something to which they have slight title. Ninty-nine manufacturers out of one hundred who have unions have them only because they cannot help themselves.

I have heard of one plant in which the employes are treated in enlightened fashion that was forced by pressure of a peculiar kind exerted from without the establishment to go through the forms of unionizing on practically the standard basis because as the national leaders said it was such a good place to work that the very fact that it was a non-union shop constituted a constant reflection on the organized labor movement. This means that employers who treat their employes in the matter of wages, hours, safety appliances, etc., even below the average may easily be immune from labor agitation while those who study and even sacrifice to produce improved conditions become the more liable to interference on the part of organized labor.

If scientific management stands for anything it stands for cutting out the "bunk" in every relationship. It is a mockery to call anything short of this scientific. I can understand acquiescing quite wholeheartedly in the establishment of one or more typical unions in my shop. I can even picture myself sitting down and planning with their leaders for their establishment. But I am quite sure that if the objects of these unions and more especially their methods were those that I frequently see advocated in organized labor circles I would have an understanding on one of two bases. Either it would be mutually understood that the unions came there on sufferance and because I could not prevent it without making an undue sacrifice, and in spite of my being out of sympathy with their objects and methods, and that I thought the members who paid their dues got almost nothing for their money, or we would have such a mutual understanding as would provide for our working out between us a new kind of a labor guild which I would hope would have quite as much cohesiveness as the old, but would give to the members in return for the money and effort expended a larger recompense in the best things of life.

An employer should welcome every possible check on his honesty of purpose, breadth of view and genuine efficiency. The solidarity of the employes is one of those checks which every right-

minded employer should both covet and cultivate. But to advocate in industry a type of labor unionism which prohibits the use of the stop watch and the payment of rewards for high performance is to advocate ultimate industrial slavery—however novel the type. A labor union propaganda which does not provide for constant experimentation and the encouragement of new types of organization is short-sighted and not big and broad enough to hold within itself the germ of a republic both politically and industrially free. Research should be as vitally necessary to the wise solution of the problems of labor as to those in other fields of human endeavor.

The labor movement must inevitably seek a new alignment—along which efficiency will become one of labor's own demands—eventually its cardinal demand. The employer who clings to an antiquated machine or one whose system of management is not of the best will ultimately be as obnoxious to labor as are today those who work long hours and pay low wages. In the Great State production will be made a part of the responsibility of labor. And here is where coöperation comes in. Because, as Taylor has pointed out, you can drive men into working hard but it is impossible to drive them into working efficiently. The friends of labor are sometimes tempted to fear scientific management simply because it is efficient. Formerly the *New Statesman* and sometimes our own *Survey* have viewed it as a chain newly forged about labor's neck. Such an attitude fails to take into account the fact that true Scientific Management is a closely articulated, delicately adjusted mechanism such as is clearly impossible in an atmosphere of dissatisfaction and discord. It cannot be built out of collective bargaining, even though individual and collective consent are inherent in its practise.

RESPONSIBILITIES OF LEADERSHIP

Do not let us put the onus of reform on the already overburdened workers of the world. If men ever learn to work together and live together efficiently and happily it will only be as we develop a new technique for the individual, yes, a new reverence for the individual. But this is only indirectly the problem of the group or the mass or the "mob" if you must call it that. The responsibility for leadership lies first, of course, at the door of the leader. In the development of a true leadership lies the great hope of democracy—

whether it be political or industrial. Only through enlightened leadership can we establish a proper relation of the group or mass to the individual, and the leader is he who points the way and pushes on and gaining one eminence uses it only as the basis from which to climb higher.

We can be reasonably sure that the leadership of the future will be far removed from the military ideal which has stood civilization in good stead to date. Even in military affairs it begins to look as if we would hear less about the martinet and more of the man with genuine knowledge, imagination and enthusiasm. I rather think that for the highest efficiency we have too little instructing and too many instructions in industry and business. We work on the fiction that an instruction once issued is carried out to the letter. As a matter of fact most instructions, especially in the higher and therefore more important reaches of industry, are only imperfectly understood. Then again each worker in the last analysis executes only that part of what he understands to be his instructions, which he feels to be essential. Occasionally he does something because he is afraid not to do it. Now if you make a practise of never issuing orders as such it puts it up to you to keep your man convinced. The result is, your associates in practise actually carry out what has become their own purpose as well as yours. You undoubtedly lose here and there—especially in the matter of military precision. But your gains are infinitely greater than your losses. Notice is given to your associates that you do not mind being shown wherein you are mistaken and do not expect anyone to do the foolish or inefficient or dishonest thing simply because it was your order or he thought it was your order to do it. So commands make way for orders, and orders for instructions and instructions for information for employes. The argument is in no wise weakened even if we admit that this system "has still to establish its mutual disciplines and possess its mind," to borrow a phrase from H. G. Wells. It will become increasingly difficult for concerns operated on anything like a military basis to attract to their employ the best class of employes. Industry and government today can have in them adventure and romance—in fact must include both if they are to be properly conducted. More and more our young men of promise will demand the opportunity to associate themselves with industrial undertakings dominated neither by the anti-efficiency

propaganda of the English labor unions nor by the militaristic know-nothingness of certain types of big business.

QUALITIES NEEDED FOR LEADERSHIP AND COÖPERATION

To analyze the leadership of the future we must recognize in it a twofold quality. We are told that there can be no sound where there is no ear to hear. In some such sense it is true that there can be no leadership if there are none to follow or if none follow gladly. This following is just as important as the leading. To be a leader a man or a woman must first *know*—know what his job is and then have the experience, the ability, the judgment, the enthusiasm and the vision to execute this allotted task. Just that has been enough to “get many a man by” in the past. But the time has gone when it is enough. It will become increasingly necessary for the leader of the future to be able to visualize these facts and capacities to his several constituencies. As the group widens and the interests of the individual deepen this becomes a more and more difficult task but one to which the powers of the truly great will be attracted.

For the followers there is also a twofold duty, for it is upon them in the last analysis under any democratic scheme that even the ablest and most versatile leader must depend. First we of the mass must learn to be discriminating as to our leaders—we must know more and more about the work of government and more and more about the methods and objects of industry. Otherwise we are ever at the mercy of the charlatan. But beyond this there is a second and most important function of the crowd. We must command the means of making our support effectual. It is not enough to recognize the superintendent of our shop or a President of the Republic as a good and efficient man. We must learn how to make these leaders feel our support and to make our associates know of it. If democracy demands leadership to make it efficient then democracy will be a failure unless we can bring about these conditions without which individuality in management becomes unworkable.

Whether we like it or not, the day has gone by when a leader of men can afford to neglect any opportunity of getting himself and his work placed fairly before his public. But he must do more than this. He must in many instances create these opportunities for

visualizing to the mass of the people his activities and those of his associates. There is so much that is distorted and untrue said about anyone doing important work that the mere desire to offset and neutralize this misinformation requires much educational work. The times and the conditions of both government and industry and the needs of society demand even more than this. It is not enough for the officer of a company or the superintendent of a shop to be honest, active and able. He must make his associates know this. He must keep his constituency convinced and with an ample factor of safety. If we are to have coöperation we must have genuine, relentless publicity affecting every relation.

The picture of a frock-coated and portly gentleman sitting solitary and silent behind a roll-top desk in the front office during those rare intervals between meetings at the bank and at the board of trade is no longer our symbol for industrial leadership. We demand more and more frequent points of contact with our leaders, we prefer to be the president's associates rather than his men. The sphinx is increasingly at a disadvantage in comparison with the man who can place his cards on the table. Whether it be for the employer of 5 or 50, 5,000 or 50,000 makes little difference—self-revelment, incessant and studied, but above all true to the facts—has become the great moving force. Science is beginning to illumine all the work of men. Everywhere, even in the humbler daily tasks, she provides an art. Our industrial relations are no longer for the isolated plant only. They are trade-wide, industry-wide, nation-wide, yes world-wide. Into this maze, if men would tread with freedom, love must enter. The dream will never come true through collective bargaining alone.

You—our leaders in government and in industry—take notice! If you force us to it we will run the ship—whether of industry or of state—by group action. But we are eager to coöperate with you, to supplement you where you are weak and to back you up where you are strong—if only you are our men. We, the workers of the world, believe just as genuinely in science as you do. We both have some way to go in understanding the relation of science to industry and in appreciating all that coöperation may involve. But we firmly believe that if the boss will only reveal himself to his men the men will reveal themselves to the boss.

The industry for which we plan must be made dynamic every-

where and all the time. Industry like life itself becomes static when simply reduced to formulae. Our standards must be only the bases for aggressive action. While realizing that science is making possible a measure of good-will heretofore unknown in this field, we must see in the bringing about of industrial order no getting away from the necessity for struggle and the strenuous life. But it must be a strife which will develop rather than hinder the human spirit. Let us seek first an individuality in leadership which shall bring actual responsibility and joy into every grade of work and then the encouragement of group control to the end that the cause of a genuine industrial democracy shall be advanced and production carried to new levels of enthusiasm and accomplishment.

SUGGESTIONS FROM EMPLOYEES HELP COMPANY SAVE MONEY

BY EDWIN A. HUNGER,
Eastman Kodak Company.

The Eastman Kodak Company has found that a system by means of which employes can make suggestions for improving its products or manufacturing conditions and get suitable rewards for the ones adopted, is good business—it pays. There is nothing philanthropic and no smack of welfare work about it at all. Not infrequently a suggestion turned in by one of the employes may result in considerable savings to the company.

Then again the thought of "cashing in" on worth while ideas tends to pull the employe out of the usual rut of things. He feels that he, too, is an important cog in the big machine; for, if he were not, his idea would not be used. When he sees his name published in one of the works' bulletins he takes pride in the fact. It means that he will keep his eyes open thereafter and think harder and faster with the idea of turning out more money-paying suggestions. His confreres are similarly affected. They say to themselves: "If so-and-so can produce something that brings a money prize, why can't we?" So it goes. The spirit is contagious, and as a net result the entire force is put on its toes. Everybody racks his mind for new schemes for producing better goods, better processes and better conditions. When such a spirit is put forth, nothing but good can result for the company.

The Eastman Kodak Company is a very large concern and operates five plants in various parts of Rochester. Of course, where plants are separate, as these are, and each is a distinct unit manufacturing certain definite products, it is necessary to adopt methods of factory control and organization suited to the special requirements of each plant. For this reason, the suggestion systems utilized in the various plants differ somewhat from each other.

In the Kodak Park Works, the largest plant of the company, where some 3,000 men and 1,500 women are employed, standard suggestion blanks are placed at convenient points about the plant.

Any employe having a suggestion to make writes out a full description of his idea on the blank, places it in an envelope addressed to the manager's office, and drops it in one of the locked mail boxes, a number of which are installed in different parts of the plant especially for the purpose. If a sketch is necessary to illustrate the employe's idea and he has not the necessary skill to make one, he is permitted to go to the company's drafting room and have a draftsman make a simple sketch for him. A stub is attached to the suggestion blank on which the author makes note of his idea for reference purposes. The number of the suggestion blank is printed on this stub and a separate blank is utilized for each suggestion in order to facilitate handling. If a drawing is attached to the suggestion blank, the number of the blank is written on the drawing.

The suggestions are collected several times daily and sent to the manager's office. Every blank is there stamped with the date on which it was collected. It has been found necessary to do this because on several occasions different employes have made suggestions on the same thing nearly simultaneously, and until the suggestion blanks were stamped, the question of priority could not be determined. As soon as the suggestion blank is stamped, a special blank acknowledging receipt of the suggestion is sent to its author, and a copy with the name of the employe making the suggestion written on it is brought to the attention of the superintendent of the department to which the suggestion applies. He investigates the merits of the idea and returns the suggestion to the manager's office with reasons for approval or rejection as the case may be. If the recommendation for approval by the superintendent is endorsed by the manager, the superintendent is instructed to carry out the suggestion and a report on another special blank is sent to the author of the suggestion, stating that his idea has been adopted. If the suggestion is not adopted, the maker is advised of that fact also, and is told why his idea is rejected.

At the end of each month all the suggestions that have been adopted and put in operation during the month, together with a brief description of the ideas and their advantages, are listed and copies sent to each member of the suggestion committee, which consists of the superintendents of the various departments. A few days later a meeting is held for the purpose of making awards for suggestions handed in during the month. Each suggestion on the

list is taken up by the superintendent who had charge of putting it into practice, the superintendent at the same time giving his idea of the award the suggestion merits. A discussion of the advantages of the suggestion follows and a vote is taken as to the awards to be made and the amounts of each. Suitable lists are then prepared of the successful suggestions and the amount of money for each, for publication in the *Kodak Park Bulletin*. A works' bulletin of this kind is invaluable as a medium for advertising the suggestion system to the employes and arousing them to the advantages of participating in the making of suggestions. Always immediately after lists of awards have been published, the influx of suggestions increases. For the sake of stimulating the employes to get in the suggestion game, awards are made each month. Formerly awards were made only every three months, but it was found that not nearly so much interest was manifested as when the announcements were made more frequently. Like many other good things it needs intensive advertising, and that is where the bulletin serves a very good and useful purpose.

Suggestions are divided into five groups, as follows: (1) improvements in products; (2) reductions in costs; (3) improvements in manufacturing methods; (4) reduction in accident and fire hazards; and (5) conveniences; the minimum award for suggestions in the respective groups being \$5, \$4, \$3, \$2 and \$1. The purpose of making the minimum awards different is to encourage the employes to give most of their attention to ideas of most value. The amount of money awarded varies according to the estimated value of the suggestion to the company. Sums as high as \$1,100 have been awarded to employes for especially good suggestions. Careful records are kept of improved conditions as a result of suggestions adopted, and for all suggestions which bring about greater savings than at first estimated supplementary awards are made. Of course, these supplementary awards come to the employes like windfalls and cannot but create a good feeling between the employe and the company.

It is the practice in some places where the suggestion system is in operation not to allow the foremen to enter suggestions for which they may expect to receive compensation. Wherever feasible foremen at the Kodak Park Works are not excluded from the privileges of the suggestion system, and it is thought that this is a good plan

since some of the very best ideas that have been obtained have come from them—ideas that probably would not have been brought forward had there not been prospect of direct compensation. Suggestions coming from foremen are written on pink slips.

So-called non-participating foremen's prizes are also awarded. These go to foremen of two groups, those having six to twenty-five men under them, and those with more than twenty-five men under them. In each group four prizes are awarded every four months, \$25 and \$10 being awarded as first and second prizes to the foremen having the greatest number of adopted suggestions coming from men under them and similar prizes going to foremen whose men have turned in suggestions of greatest value. Foremen who compete for these prizes are not allowed to enter suggestions in the usual way, but are permitted to help their men in preparing their suggestions.

If the author of a suggestion is not satisfied with an explanation rejecting his idea, he is allowed to go to the superintendent and discuss his idea even after taking it up with his foreman or assistant foreman. A grievance committee, made up of workmen, also meets periodically for hearing complaints, getting suggestions for improving the system and answering questions.

The number of adopted suggestions in the Kodak Park Plant in 1916 came to 1,000 out of a total of 2,300 handed in. The average number of adopted suggestions runs to between 40 per cent and 45 per cent of the total number of suggestions handed in.

The Camera Works, the next largest plant of the Eastman Kodak Company, employs a somewhat different suggestion system from that used in the Kodak Park Works. Here the organization for handling the suggestions consists of a general chairman, a secretary and five special committees, each of which is made up of three department heads. The suggestions are classed in five groups, as follows, and each group is looked after by one of the special committees: cost reduction, improvement of product, general maintenance, accident prevention and improvement in manufacturing methods.

The blank on which the employe of the Camera Works describes his idea is radically different from that used at the Kodak Park Plant. It is provided with a stub, but the author of the suggestion writes his name on this stub only, which is removed by the secretary before being handed over to the proper committee. In

other words, none of the men on the committee is allowed to know the name of the author of the suggestion on which he passes.

All suggestions are sent to the general manager of the plant, who refers them to the secretary of the suggestion committee for classification and acknowledgment, after which they are referred to the various committees for action. The committees return a separate written report for each suggestion with a definite statement as to whether the suggestion is approved or not, and if not approved stating the reason.

All approved suggestions are referred to the general manager for final approval, and then a note is sent to the author of the suggestion saying that his suggestion has been approved and stating the amount of the award. Awards for suggestions which effect a saving are based on the estimated amount of the saving for one year and after each suggestion has been in effect for a full year, the actual saving for the year is figured and if it exceeds the amount of the estimate a further award is made.

Lists of awards are published in the *Camera Works' Bulletin*. At the end of each year an honor roll is also published which contains names of all employees who have received \$25 or more for suggestions for the year. The number of suggestions received in the Camera Works in 1916 was 1,618, out of which 595, or 29 per cent, were adopted. The number of suggestions adopted per 100 employees was 23.

In the other plants of the Eastman Kodak Company modifications of the systems outlined above are employed.

CENTRALIZED LABOR RESPONSIBILITY FROM A LABOR UNION STANDPOINT

By A. J. PORTENAR,

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Centralized labor responsibility means the creation of a new department in the management of plants, the function of which shall be the control of recruiting, retention and discharge of the working force. Judged by its title, this article assumes to state the attitude of trade unionism toward this innovation, when in fact trade unionism as yet has no attitude. The thing is too new, and, so far as I know, no contact has yet been established old enough and wide enough to permit or compel consideration and valuation by official trade unionism.

Nor have I had such personal experience with the practical workings of centralized employment departments as would qualify me to speak with the assurance that attends knowledge. What I have to offer, then, is the reaction of one union man to a new theory of management as applied to the human element in industry, and which may or may not be a correct forecast of a collective sentiment which has not even commenced to form.

So regarded, it is not pure presumption on my part to set myself up as a spokesman for organized labor. For thirty-five years I have been a member of the union in my own craft, active in its councils, and interested in everything that pertained to the general labor union movement. I have worked with union men in the shop and worked for them as their representative. What I shall say here expresses my own views, but this long acquaintance with the movement and the people in it may give those views a measure of value as interpreting the probable reaction of others.

CAUSES OF LABOR TURNOVER

In the scale of prices of Typographical Union No. 6, there is a provision that no man shall be paid for less than a day's work even though he is hired for less than a day. In the philosophy underlying this legislation will be found the most prolific of the many causes

which contribute to excessive labor turnover. The workman is regarded as an easily replaceable tool of production whom it is a loss to retain a minute longer than he can be employed at full capacity. Unlike inanimate tools of production, he represents no investment. Hence the tendency to make his term of employment for minutes only, if that suits the convenience of the employer, and the counter-acting tendency of the union to set up at least the pitiful limit of one day as a minimum of permanence. Thus studied, this little rule which takes up two lines in the scale book is a brilliant illumination of industrial history. It contrasts the relative values placed on things and men.

One might mention many causes of excessive labor turnover, but if they were analyzed, they would, in the main, finally resolve themselves into that same fundamental one—that workpeople are regarded, not as human beings, but as animated tools of production, which can be temporarily used upon payment of an agreed sum.

Human thought has a way of seeking concrete expression through a personality or a thing rather than by means of an intangible principle. So, when one is asked to name the chief cause of bedevilment in handling labor supply, at once there leaps into mind the figure of the foreman—the living, obvious doer of the harm so clearly recognized. He wields despotic authority, seemingly without check from any power in the heavens above, or in the earth beneath, or in the waters under the earth. Yet he is not selected because he is fit to possess such arbitrary power over a limited number of his fellow-men. He is chargeable with much evil doing on his own account, and occasionally may be credited with humane instincts that make for amelioration. But in reality he is only a pawn, the screen for those who prod him from above. He is permitted despotic power over the detail of who shall work, but he is only a puppet as to the policy which controls the workers. To take from a number of foremen the power now given them, and to centralize that power in a single person, without at the same time entirely transforming the spirit that actuates the mechanism, may abolish some of the grosser evils, but will leave the main cause of excessive labor turnover untouched.

These grosser evils are serious enough. They engender toadyism and bribery on one side, favoritism and oppression on the other. The manhood of men and the chastity of women are frequent offer-

ings at the feet of a little tin god whose favor must be won or his malevolence placated. That is the sort of creature the foreman can be when the employer will not check him and the workpeople cannot. When a union enters upon the scene, flagrant abuse of authority in the matter of discharge may lead either to justice done or an explosion; but motives of choice in hiring are too subtly concealed to admit of effective regulation. Unions have found it necessary to legislate for the punishment of members who use unfair means of obtaining employment, but proof is difficult and prosecutions are rare.

Naturally, because of his great powers, the foreman is a subject of union law making, not in his capacity as an overseer of production, but in his function as the arbiter of employment. Most unions will not permit him to be a member; the International Typographical Union compels him to be one. Yet, because he is the lowest officer in the executive scale the outcome of the legislation is unsatisfactory; he can make trouble, but he cannot allay it. Therefore, so far as existing union laws treat of the foreman in relation to employment, I would expect no objection to their amendment or repeal whenever a new system makes them obsolete.

The influence of seasonal production on labor turnover needs but to be mentioned rather than elaborated on in this short paper. Its causes and possible remedies are far outside of the immediate sphere of the employment manager. A volume would scarcely suffice for the consideration of this one phase of the employment problem. The same may be said of such potent factors as the condition of trade and demand or lack of demand for labor.

Among minor causes of excessive labor turnover is a sort of restlessness which is most frequently manifested by the more competent mechanics. A job may be satisfactory in every respect, quite as good as they are likely to find anywhere, and yet they will leave because they do not want to remain in one shop too long. Perhaps they are themselves unable clearly to define their reasons, but, so well as I am able to interpret the psychology of this desire for change, it rests upon a fear of losing their independence, of getting into a frame of mind wherein they will come to attach disproportionate importance to the retention of a certain job. There is some basis of fact for this idea, for I have known men who have worked in a shop for a long period whose overhanging nightmare is the fear of

losing the job. Long service made them uneasy instead of giving a sense of security.

THE UNION ATTITUDE TOWARD LABOR BUREAUS

Traditional methods of hiring and discharge are so prolific of all-around dissatisfaction that any new method which is based on study of the problem, and can reasonably be expected to improve conditions, will start with a tremendous presumption in its favor. It would be hard to devise a worse system than the one we now have. Opportunity to work is the primal necessity for nearly all of us, and this opportunity we must seek through such means as are available. Even the strongest unions have been able to accomplish little in the way of improvement. Their members are not so entirely at the mercy of caprice or vindictiveness, and are much less subject to unfair competition between seekers for employment than are the unorganized, but they are by no means free of these evil influences.

There comes now a proposal to lift this matter of prime importance out of the slough of neglect in which it has lain, and to give it the dignity and thought which were always its due. The proposal comes from the right quarter—the highest; and its essence is to put it in the right place—the highest. The purchase of human labor is to be considered as carefully as the purchase of equipment and supplies, as carefully as selling and financing. The officer in charge is not to be a mere understrapper, working his sweet will in irresponsible despotism, but one broadly clothed with power and its attendant responsibility. The motive is the best business motive in the world—enlightened selfishness. It has been discovered that former methods are wasteful and relatively unproductive; that judgment in hiring, and a great deal more judgment in keeping employes when hired, is a paying proposition; it breeds dividends both of money and good feeling.

How will union men receive such a proposal? Why, just as all other working-men will receive it. It is a rightful but long delayed tribute to the worth and dignity of labor. It is progress like that which gave labor a place in the cabinet of the President of the United States. It means that in the cabinet of every business chief there is a man who speaks for people, as contrasted with those who speak for things.

Therefore, such a proposal should inevitably and triumphantly

establish itself. But soft! The proposal is good in itself, but let us see how and by whom it is going to be worked out.

Recently I read an article on the work of a woman who is at the head of the employment bureau of a large corporation. It appears that among her desirable qualifications for the position is the ability to smell out agitators, and not the least of her achievements is her notable success in keeping that pestiferous species out of the plant. That illuminating bit of information gave me pause. Remember, I have been asked to say how *union men* would regard centralized labor responsibility. Well, I am a union man and I have an uneasy feeling that I would correspond rather closely to her idea of an agitator. If there were a union of the industry carried on in that shop, I would join it. If there were none, but a movement started to create one, I would be mixed up in it. Very likely I would be the prime mover. If all the justice and sweet reasonableness called for in the prospectus were not on tap, I might rise and say so. I have an ineradicable notion that workpeople are entitled to a voice in the making of wage scales, fixing the length of the workday, and other important incidents affecting employment, and that no amount of kindly welfare work, no benefits of any sort flowing from a benevolent despotism which arrogates to itself entire jurisdiction over such matters, can compensate for the deprivation of this inherent right. Still less so when the despotism is not benevolent.

Now, if that clever lady found out that my brain harbored such pernicious ideas, I would be refused work in that shop. And if other union men were barred for similar reasons, the impression would probably gain ground among them that, so far as they were concerned, the new method was no better than the old. They could enter that shop only by surrendering their right of association. The new idea, so promising in itself, would meet with hostility from union men.

So far as I am aware, departments of labor such as we are considering have not yet been established in industries where the employes are organized. When they are introduced into industries which are unorganized, the question of the attitude of union men will remain an academic one for such industries. When they are brought into industries which are strongly organized, there is little doubt that the managements will take the union into their confidence and endeavor to show it the mutual advantages that will flow

from the new plan. But when such a department is established in an industry where a union exists, but is struggling for a foothold, where it has not yet secured recognition and is conscious that its fate still hangs in the balance, then the new departure will be looked at with suspicion. Its very centralization will be regarded as an additional means of exercising discrimination against union members, and if that discrimination makes itself apparent as in the instance cited, it needs no conjurer to foresee the attitude of that union to that department of labor.

And why not? Here is a promise made to the ear and its fulfillment almost immediately broken to the hope. Union men believe that their interests are mutual, and are best cared for by association and collective action. That is the lesson of their experience. But if this new dispensation, like the old, denies them this right, and demands that they rely on the newly awakened good-will of the employer, both parties being fully aware of the impotence of the individual workman, why should they discard the lesson of their experience?

ACTUAL METHODS OF HANDLING LABOR TURNOVER

In all the literature that has thus far come under my notice relating to centralized labor bureaus, I find a very satisfactory realization of the facts that good pay, fair treatment and an earnest desire to retain, if possible, a person once hired are potent means toward the reduction of labor turnover. Discharge is verily looked upon as a last resort when all efforts to make the worker fit in somewhere have failed. And since the reduction of labor turnover is the avowed object of the new department, these are the natural lines for it to take.

Again let us examine the means whereby these objects are to be accomplished. It is clear that if the labor department is to succeed, it must have some voice—perhaps a controlling voice—in every matter that affects the human equipment of the plant. The employment bureaus described in magazine articles claim such powers, but in my work in the public employment bureau I did not find it so. I recall four such employment managers who told me that they had nothing to do with fixing pay; that they tried to find suitable men, and then sent them up for an interview with the foreman to make the best bargain they could. Except that the applicant had

one more hurdle to jump on his way to a job, I cannot see that these four plants had improved anything in this particular.

But let us get back to this point as it directly affects the union attitude, and we will take the best examples. Our enlightened employment manager has his say in the making of rates. But unions also want a voice on that subject. If the rates offered equal or exceed the scale made by the union, no question can arise. But suppose the rates offered are lower than the union minimum, or so arranged that they may be higher or lower, and the union has not been consulted about them and will not be. We get right back to a familiar bone of contention, and in that case the union attitude to that shop remains unchanged. The fact that the employment manager instead of the foreman announces to the applicant how much he is to be paid for his work has not altered the situation at all.

We now pass on to the adjudication of grievances. Many sincere employers and managers have assured me that they are always willing to hear and adjust the grievances of their workpeople. I do not bring their good faith into question, but I have a fairly thorough knowledge of human nature as it is exhibited in the shop. Shall I tell you the fundamental reason for the existence of the labor leader? It is that the workman may have a spokesman who is economically independent of the employer, and who can therefore meet the latter on equal terms. When the livelihood of the man who speaks for himself or his fellows is dependent on the good-will of the man he faces, it requires courage to accept the mission and still more courage to speak with frankness and contend with determination for the side he represents. Not many employers are spiritually big enough to forget or waive the power they possess; and even though they may be, the man who treats with them has no assurance of it. Hence there is a silent but active intimidating force exerting its tremendous pressure on the workman, and only the exceptional man can disregard its promptings.

The thing takes on a different aspect, however, when an executive officer of the union appears to discuss matters on behalf of the men. Not without reason do employers resent what is termed the "unwarranted interference of outsiders," but the ostensible reason for resentment does not even remotely resemble the true one.

Although the employer himself may be a man of big caliber, able to forego the power of terrorism he possesses, there are under-

lings who are not. Their memories are long, their vindictiveness unbounded. No man can so order his conduct as to entirely avoid giving the colorable opportunity the foreman may be seeking. So in this respect, where the union has no standing, its attitude in each instance will be determined by events. *Ad interim* it will be a case of "show me."

The way discharges are handled in the magazine stories already mentioned is not the way the thing is done in the few plants having employment managers with which I have had some contact. But we will agree that such plants have taken the form of a good thing without the substance. Different unions have their various methods of protecting their members against unjust discharge. Typographical Union No. 6 has worked out an excellent system, whereby questionable discharges are submitted to a mixed tribunal of employers and employes, whose decision is final. The union wins nearly all the cases, thus demonstrating the need of a power of review over the discharging authority. It also shows that when the union has a reasonable opportunity of preserving the rights of its members, it will also use discrimination, and will not press unreasonable claims, or can be effectively checked if it does. Where a union is recognized, its procedures are of course followed.

There can be no question, however, that union men, just like other men, will cordially respond when they see that the management of a plant, upon its own initiative, seeks to do exact justice in this important regard. And though they may be sceptical at first, continued well-doing must convince them of the sincerity of the desire. By the glow of gratification I got in reading about it, I gauge their feelings on seeing it. If employers had always treated their people justly there never would have been any unions. If they learn to do so in the future the need for them may be less urgent. But we won't disband yet.

THE EXTENT OF UNION APPROVAL

Is there anything in the effort to reduce labor turnover which cannot be approved by a broad-minded union man? The answer is, yes; but this requires elucidation. If the desired result is attained, that fact in itself is proof that the people working in that plant are at least sufficiently well treated to be willing to remain. A management enlightened enough to concern itself about the matter,

and more or less successful in accomplishment, deserves its meed of approval.

Suppose the company inaugurates or continues a policy of opposition to organization? Suppose its hostility goes to the length of excluding union men from the shop if they are known to be such, or discharging them if they join? Even then approval should not be withheld, nor would it be. Men may be opponents and yet find ground for mutual respect.

But there are degrees of approval. The broad-minded union man rejoices at any betterment in the condition of those who labor, whether obtained by their own efforts and conceded as their right, or granted as a measure of expediency, perhaps partly as an insurance against organization. But for himself he certainly would resent the espionage, in the form of solicitude for his welfare, which appears to be an invariable component of the systems to which publicity has been given. To be completely accompanied in his goings out and his comings in, his leisure regulated, his amusements selected, his wages apportioned—these are extensions of his employer's contact which he would not submit to himself and cannot approve for others. When he acknowledges both the good intentions and the good results that have flowed from this new conception of management, he has not surrendered his conviction that as a seller of his labor he is entitled to be heard in the determination of the terms upon which it shall be sold; he has not receded from the lesson of his experience that the only way he can make himself heard is by association with his fellows. Nor does he admit that the buyer of his labor bought also a regulatory interest in his life.

Let me pose as that broad-minded union man, which of course is what I have been doing all the time, and quote a part of a letter recently written by me to a prominent manufacturer in the Middle West, a letter that summarizes my position on this point:

The evident praiseworthy feature of your work is that you are giving serious attention to the question of human relationships in industry. No matter how much I may disagree with your idea that you have found the road to industrial democracy in your shop, or what objections there may be to your methods, recognition is still due of the fact that you are apparently making a conscientious effort. There is a standard of right doing to which you are striving to conform. Neither can it be denied that people working under the conditions you describe are better off than those employed where nothing else is ever considered than how much can be obtained for how little. But when this is conceded, it is not thereby conceded that industrial democracy is established.

You say that your work is not to be confounded with that which is usually called welfare work, yet welfare work is strongly suggested as I read your various addresses. You are still the benevolent despot and nothing more, so far as I can see. Personally I would resent some of the things you say you do. Your employment department would find me out of harmony with the organization, I very much fear, unless I successfully dissembled my real feelings, which would not be good for you or for me. There are lots of people who no doubt accept what you do complacently, since it is done for their benefit. The same kind of people stolidly endure worse treatment, up to the point of desperation, if that is the only way to earn their bread. But the difference between the two kinds of employers is the same as that between the benevolent and the cruel despot.

I believe I have accurately forecasted the union attitude in this regard. I believe also that the union can afford to wait. Liberty is an imperishable desire of the human heart, and will surely assert itself even among the most submissive. That no man is good enough to rule another man without his consent is an industrial as well as a political truth. To impose such rule as a condition precedent to an opportunity to earn the means of life is not consent.

Also I believe that attempts at regulation which intrude themselves into the private life of the workman must inevitably breed hypocrisy and deceit before they finally foment rebellion. If explanations are necessary of certain acts, they will be manufactured; if vouchers of expenditure are required, means will be found to produce them. To guard against such impositions there springs into being a sort of "Third Section," a secret police. To call these agents "advisors" or "investigators" is but to give a euphonious name to an ugly practice.

FAIR DEALING AND SYMPATHY FUNDAMENTAL

I have already referred to certain establishments which have possessed themselves of employment managers and with which the Public Employment Bureau has had business relations. I do not know the methods used nor the extent of the powers delegated, but I have had some glimpses of the results. They were slaughter houses before; they are slaughter houses still. The employment managers have not even succeeded in stabilizing their own jobs. Inside of six months two of them were tumbled off their thrones and themselves became applicants for employment at the bureau. The reasons were obvious. Working conditions were bad in every one of the essentials. People sent to them at their request were not even sure of an interview.

If illustration were needed, these examples prove that mere centralization has no beneficial influence on labor turnover. Any scheme is useless which has not for its basis fair dealing and decent treatment, while even in the absence of a more or less elaborate plan, remarkable results can be attained if they are employed. I worked fifteen years in a composing room where the permanent force was about 100, and it was marvelous how the years rolled by with hardly ever a change unless death made it. A fellow felt as if he were only a newcomer when he had but a beggarly ten years or so behind him. There was no deliberate planning to that end, but the employment manager who could show equivalent results would be in line for a yellow jacket and a peacock's feather.

Then comes the personal equation. The man or woman competent to do this work must of necessity be big—very big. Sympathy with and comprehension of people is the first thing he needs—and the second, and the third. If he has these he is qualified and experience will supply all minor details of expertness; without them he may have every little nicety of technique, but he will accomplish no more than is forced upon people by their necessities. I have a man in mind as I write this.

Speaking generally, it has been thrust upon my notice that the quarters where the question of employment stabilization has received most serious attention are also the quarters where a flaming sword bars the entrance of the union. The occasional individual may come in, but he must be quiet. He is always on sufferance. Very well; so be it. Often enough employers who conduct non-union shops are far above union employers in every humane attribute. Therefore we will acknowledge that which is good, respect them for doing it, and fight them till time ends on the issue of man's right to unite with his fellow-man against the bondage imposed by his individual helplessness. Yea, though we are bound by a silken rope instead of an iron chain, yet will we not endure it. But whenever they shall recognize our vital interest and our equal right in the working out of these momentous things by which our lives are made or marred, then will they always find us ready to meet them. Then will they have turned their faces toward industrial democracy.

THE MECHANISM OF MIND

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No problem has of recent years received more attention than that of the origin of mental traits. It is not my thought to review this discussion but rather to find some new method of approach which will carry us nearer the goal than the older views took us. Occasionally advances make such radical reconstruction that a discussion of older views becomes a waste of time. Such a change has been made by Mr. McDougall in his "Social Psychology." A careful use of terms enabled him to take the indefiniteness from the words "instinct" and "emotion" and give them a meaning for which objective marks can be found and objective tests may be applied. To be sure that a given action is natural there must be some specific inherited mechanism by which the act is performed. Our physical heredity is a group of such mechanisms, each of which has some antecedent in the germ cell. No act can therefore fairly be called natural that has no perceived mechanism aroused by specific antecedents, and, when aroused, acts in a specific manner regardless of the events that environ it.

The first test of inheritable traits is that they are the result of some mechanism whose elements lie in the original germ cell. Each instinct, however, is accompanied by a definite feeling. These feelings are our emotions, and with them are contrasted the acquired sentiments. If each instinct has a corresponding emotion, then we have a double check as to what is heritable. There must be some mechanism which results in an instinctive act and an accompanying emotion which arises when the act is performed. We need not decide whether the emotion precedes the instinctive act, or the act the emotion, if we may be sure that each is accompanied by the other, so that the existence of each may be tested by the presence of the other. It suffices to know that we thus have objective tests of what is natural and simple as opposed to the complex and acquired.

Seven elementary relations are found by Mr. McDougall to

meet this test: The instinct of flight and the emotion of fear; the instinct of repulsion and the emotion of disgust; the instinct of curiosity and the emotion of wonder; the instinct of pugnacity and the emotion of anger; the instincts of self-abasement and self-assertion and the emotion of subjection and elation; the paternal instinct and the tender emotion.

It is not my purpose to defend or criticise this list. The interests in it, whether we alter it or leave it as Mr. McDougall states it, is quite as much in what is excluded as in what it includes. Heredity is a powerful agent, but it lacks much of the definiteness we attribute to it. We must seek its complements before we can account for men as we find them.

We usually contrast nature with nurture, and put in nurture all which is not nature. By thus doing we confuse two different fields with mechanisms of a radically different character. To avoid this confusion I shall put in the province of nurture only that pertaining to physical elation or dejection. A truly natural instinct is aroused by specific stimuli, and when aroused, acts in one specific manner. There are no alternatives in the responses to instinctive situations. The impulses of surplus nutrition and deficit nutrition, however, are not the same. The elation of a surplus and the dejection of a deficit direct the current of thought and activity in peculiar ways, each having its own path and goal. This simple contrast and the laws that follow its perception have been overlooked because of a false standard of judging states of surplus and deficit. It is usual to measure the subjective result by the objective presence of a surplus or deficit of food. But a meager diet may yield a surplus of energy, while an overloaded stomach may transform food into toxins. The real test must be the actual transformation of food into energy, and not its quantity. Surplus energy is a physical state from which certain emotions arise, while a deficit of energy creates emotions of an opposing character.

The problem of energy is, however, not wholly determined by the assimilation of food since the lungs have an important function in creating surplus energy. Any bodily defect, on the other hand, or any failure to eject waste products, creates a state of deficit, and thus evoke the emotions that accompany this condition. We all feel these contrasted states, and on them many important emotions depend. To explain their physical antecedents we must first

realize that the normal outlet of energy is in some discharge. What is energy becomes by transformation activity. This may be muscular or sex activity, nervous stimulation, bodily secretions, the ejection of waste products, or similar transformation. Opposed to discharge we find distention, pressure and inflammation as indications that somewhere the bodily functions have failed to act properly. With this failure comes a deficit of energy and its manifestations. Discharge may thus be assumed to be the normal index of surplus energy and some local distention the corresponding index of states of deficit. If one prefers to say that states of deficit are due to the toxins accumulating in obstructed or overused organs, I shall not find fault with the statement. I am not searching for causes, but some measurable index. Although we cannot see the toxin, the results in terms of distention, pressure and inflammation can be observed.

The states of surplus and deficit may thus be measured in discharge and distention. The corresponding emotions are those of elation and depression. When the depression is diffused it is melancholy; when localized it is pain. A diffused elation is joy, and when localized it is called pleasure. Our joy and pleasure indicate the normal transformation of nutriment; melancholy and pain indicate some obstruction to these normal processes, with a resultant distention, pressure and inflammation. The pleasure of eating would cease if there were no discharge of fluids to mix with the food. The pleasure is in the discharge, and not in the contact of food and mouth. Nor is the accompanying muscular activity pleasurable except as there is a discharge of surplus energy through the muscles. In each pleasure some discharge of energy occurs, and to it the pleasure must be attributed. Evolution localizes and intensifies these pleasures, as it does also our pains, making their intensity equal their vital importance. If, however, discharge is pleasurable and its obstruction involves pain, my thesis has value, even if the complex cases need additional facts for their explanation. I am not trying to explain evolution, but the basis on which it rests. Nor is it necessary to show why discharge or distention produce these effects. If the connection is obvious they can rightly be used as the basis for further investigation.

The fundamental discharge is the sex discharge. Reproduction is the primary way in which a surplus is disposed of. In the

lower forms of life cell division is the index of a surplus. As life moves upward the sex act becomes the center of conscious interest, and is the normal outlet for surplus energy. All fundamental surplus emotions thus center about the sex act, and any restriction on it produces disorganizations which affect health, vigor, and even a normal existence. Take from an animal its surplus energy and the sex emotion dies. It gains in strength only in periods of the year when surplus nutrition is available. In winter sex is dead; in spring it becomes dominant. In the case of man the conditions may be more complex, but if properly analyzed they give the same result.

The action of a surplus is simple. It goes out in sex indulgence. A deficit forces a choice. The mind therefore divides actions into the essential and non-essential, and chooses the former. There is always a shrinkage in the presence of a deficit. The chosen part becomes the self; the rejected part becomes the non-self. The self thus shrinks under the pressure of a deficit but by the process becomes clearly defined. The impulse to save the self becomes the primary impulse of beings facing a deficit. Self-motives thus gain the place under the pressure of a deficit that sex impulses obtain when surplus prevails.

The moral in its primary sense is the self-preserving. Self-regard only becomes descried by the moralist when he acquires the concept of a soul. Then to save the soul he sacrifices the self. But he does not do this until he decided that soul preservation is more important than the preservation of body. The new self, the soul, is as dominant in the higher morality as the material self is in the old. Self-preservation and sex indulgence become more clearly opposed; the things most important to personal preservation coerce sex indulgence, while reproduction is at the expense of immediate personal advantage. Thus we have two contrasted forces which are dominant or recessive as external conditions favor the one or the other. The instincts are thwarted, while the nutritive impulses dominate so thoroughly that we mistake them for nature. This makes the contrast of instinct and impulse especially important. An instinct is an inherited bodily mechanism which acts under specific conditions and is accompanied by a specific emotion. An impulse is a tendency to activity not induced by some specific mechanism, but by the nutritive states of the organism. With overflowing energy we manifest one group of impulses; when re-

duced by a deficit we manifest an opposing group of impulses. Nutritive impulses are thus either conservative impulses with the thought of self dominant, or sex impulses through which the race is propagated. All nutritive impulses are offshoots of one or the other of these two. Fear is an active force in augmenting the self impulse, while love and sympathy reinforce the sex impulse. Practically, our natural disposition is banded in two opposing groups of tendencies instead of being unified.

Our mental mechanism is like an insect with no power to co-ordinate its wings, each being excited to action by the rays of heat that strike it. The movement of each wing thus tends to place the insect where the rays of heat strike the other wing, thus exciting its action and repressing its own. A crude advance results through the alternate action of the two wings. Another illustration is that of an oarsman moving a boat with one oar. By paddling first on one side and then on the other he goes forward, when if he paddled on one side only he would move in a circle. The self and the sex motives counteract each other in some such fashion, and by their alternate dominance a crude progress is insured which neither of them alone could produce. In this struggle self has gradually gained the dominance over sex with the result that our cultural forces are organized in ways that repress sex. This is the strength of Freud's position. Our wishes are sex wishes, however, only in so far as they reflect states of energy and surplus. But all dreams are not sex dreams, for dreams of self-preservation are frequent. When we overeat and digest we dream of love; when digestion goes wrong we have a nightmare. Bad digestion means dreams of demons, lions, bears, or impending disaster. The self is always the loser through some impending woe. This is as elemental a situation and as frequent one in dreams as those where in a glow of energy we seek to gratify our sex impulse. Both are primary nutritive impulses, and out of one or the other all our impulses arise. We cannot say with Freud that sex dominates the self, but we might say with Bentham that we have two masters. These two masters, however, are not, as he thought, pleasure and pain, but sex and self. The one subordinates personal motives to race welfare, while the other conserves the individual at the expense of the race.

We may now return to the contrast made by Mr. McDougall putting instinct and emotion in a definite relation to each other.

Instinct is a part of our nervous inheritance measurable in definite bodily reactions. Emotional states, however, are not due to these mechanisms. Their source is the glands and not the nerves. If this be true, we do not inherit our impulses as we do our nervous reactions. Had we an inherited nervous hierarchy we would be controlled by its reactions. There would also be that unity which philosophers admire. As it is, choice is real even if its antecedents are definite. We can will; we can inhibit; but to do it we must set the gland activity over against the inherited reactions of the nervous system. The nerves reflect past conditions. The glands voice the forces of the present environment.

When we know what the glands cast into the blood we can predict the emotion that results. The orders transmitted by the nerve are not self-created, but come from the dominance of emotions created by the transformations in the blood. The physical basis of consciousness is in blood chemistry, and not in nerve irritation. If this be true, self is not a reaction of some supreme nerve center, but is a flow that changes with the composition of the blood. Self is thus a changing emotion, not a stable control due to the centralization of the nervous system.

I do not mean to argue this contention, but rather to explain the phenomena of self on this basis and at the same time to connect my explanation with that given by the Freudian thinkers who of late have thrown so much light on the inner working of consciousness. It is not difficult to explain the facts of sex on my hypothesis, and this explanation will in the main agree with that of Dr. Freud. But beyond this point we separate. He regards the self as sex which is controlled to its detriment by outside agencies which he calls the censor. To my mind the censor is not external—tradition, morality and the like—but internal in the struggle of the gland and nerve for supremacy, or it may be in the struggle of different glands for supremacy.

This difference in explanation leads up to difference in analysis. If we think of consciousness as a phenomena of nerves many groups of facts remain unexplainable on any known basis. An appeal to mystery is found in all psychologists who base their system on nerves alone. This hidden part becomes psychoanalysis, subconsciousness, a divided self, or any of the dozen schemes in which the psychologists wander as soon as they enter the realm where nervous

reactions no longer explain the facts. Break up this monistic explanation to which psychologists adhere by giving another group of forces their proper place, and an explanation of complex data can be found that does not reach beyond the known facts of science. Dreaming is transformed into knowledge and mystery becomes obvious fact when we seek in the blood the source of the changes which nerve psychology fails to clarify. To make this change demands a new concept of self and a new view of the way in which self-control is exerted. Can a mere flow with no fixed location establish a control such as that which psychologists have sought in a centralized nervous system? If it can, mystery disappears when we go beyond the nerve and see what the gland is doing.

The main issue, therefore, is whether the self is a fixed nervous reaction wrought out by a slowly developing heredity, or whether it is made and remade each moment by our dominant emotions which in turn have their source in present gland activity. Do I change as my glands alter the composition of my blood, or do I change only as heredity alters my central nervous system? This is the problem, and the answer must come by giving some rational explanation of the evolution of the self. How can temporary flows create so stable a character that the results seem to imply an inherited mechanism?

I shall start the discussion of these problems at the point where my reasoning breaks with that of the Freudian school. The kernel of their position is that the organism has certain fundamental impulses or wishes which are censored by external conditions. The organic impulse is thus blocked and thwarted by external restraints, with the result that abnormal reactions are created which tend to disrupt the organic flow which would result in wish fulfilment. The censor and wish are in perpetual conflict, and by this fact the abnormalities of conduct are explained. A familiar illustration of objective restraint on internal impulse is the action of a mother in guarding her child from injury. The child sees a bright flame and stretches out the hand to reach it. The mother checks the movement in time to prevent injury. If this impulse and this checking is repeated often enough the impulse is restrained, not directly by the mother's act, but by the habit formed in the child's mind of stopping before the attainment is effected. A habit is thus in the

end the censor, but its formation is the result of an external restraint of which the mother's care is a good example.

I do not deny these facts nor the conclusion if the purpose is to illustrate the existence of a censor of impulses and one method of its formation. But it is a complex phenomenon that fails to bring out the nature of censorship which we must treat as an evolutionary product and seek for its source. If we take a low type of organism in which there is as yet no centralized control its activity would arise in this way. There would be in some tissue or gland an accumulation of surplus energy with a tendency to transform itself into activity. The transformation of latent energy into activity takes place through some shock received from the external world. The gland or tissue accumulating energy responds to some external stimulus and discharges when thus aroused. This circuit due to a direct interaction between organism and environment may be called *responsive behavior* as activity and external shock are closely related. There would be no self manifested in such behavior, nor any censorship.

In higher organisms where there is both brain and body the behavior is more complex. The shocks of the environment no longer are the direct source of action. The environment arouses brain activity, and brain activity is followed by bodily movement. It is in acts of this kind that a self appears and in which there is an exhibition of will power. The evidence of consciousness is taken as the final authority. We should, however, disregard this evidence and watch the processes active when the brain controls the body. In essence the brain is not different from the body. It is merely one segment of its loosely organized evolutionary predecessor specialized for given ends. It has every power of the original segment but nothing really new. If this be true, the circuit is now a gland activity which becomes emotion and then wish. This is carried over a connecting nerve to some body organ where it excites the same activity that in a lower organism would have come from a direct external stimulus. We have thus a double circuit—gland activity in the brain, followed by a nervous discharge which excites bodily gland activity from which activity results. This is the physical series when acts occur which we regard as willed or induced by conscious desire. Viewed as behavior, however, the desire is only a step in the circuit—a consequence and not a cause.

Volitional behavior differs from responsive behavior not in kind but in complexity. The brain starts bodily activity and also checks it. The fact is not in dispute. The problem is to discover the true antecedent. If there is a circuit, each part of which has some physical manifestation, behavior can be observed and measured. The failure to get an adequate explanation is due to an endeavor to explain all the facts in terms of nervous reactions. When this is done there is always a break somewhere in the explanation with a mystery which permits loose thinking about the sources of action. When, however, emotion is connected with gland activity instead of nervous reactions the series is explainable in physical terms, and the source of the censorship becomes plain. There is in every act a struggle for supremacy between the nerve and the gland, and each in turn gains a partial supremacy. We thus have a dualism of control instead of a nervous hierarchy. Nor is there any such thing as a centrally initiated process. All processes are flows; a perpetually interacting circuit that lasts all through life. The self is a phase of this circuit which originates no more than any other transformation through which the life process goes. Has thought a neural seat, a sub- or a super-conscious abode, or is it a flow that at points rises to self-consciousness? Each view has its presuppositions, its images and its conclusions. Between them we must choose.

But before a choice is made an additional complexity must be noted. This new phenomenon viewed as a conscious product is *delayed response*. Mind becomes more than volition when action is delayed and in the end determined by forces not in the primary circuit by which volitional control is maintained. In conscious terms we think of this new control as memory. The momentary stimuli of today are checked, and their tendencies thwarted by a repetition of the stimuli that acted on the brain yesterday.

This is delayed control viewed as a conscious product. The same thwarting of primary impulses takes place through the action of the imagination in the form of images and ideals. The self now gets, or seems to get, an objective reality. It is no longer a mere product of the primary life currents and becomes a soul endowed with superior attributes. I have no desire to deny these facts, nor shall I try to obliterate the distinctions thus created. We do have a soul; images and ideals gain a control and memory reactions become powerful enough to stay and transform the primary

impulses. This testimony of consciousness we should accept, but at the same time it should be reinterpreted in harmony with functions the body is capable of performing. The physical interpretation of mental life is correct if the conscious facts can be resolved into antecedent gland and nerve and muscular action. The soul is then not a new phenomenon, but a more complex form of underlying interactions. To make this point clear we must determine what physical changes lie back of delayed response. If this can be explained the more complex products losing their mystery become orderly facts.

The difficulty in getting the clue to explanation of delayed response comes from assuming that memory is its most elementary form. The soul thus seems to have a function not mechanically explainable. But if fancy and image making precede memory, the relation of this new series of facts to emotion and gland activity becomes apparent. We think of a child as having a memory when in reality it has only a very weak one, if memory is measured by adult standards. The child, however, fancies and builds images before it remembers actual occurrences with the detail which adults call truth. What it builds is rather beauty than truth, for it injects pleasing elements into its world that do not reflect the actual external contacts. The child gains in memory as it loses in surplus energy. A good memory is a loss of vitality cramping the power of image making. What is so plain in the case of a child is still visible, though obscured, in the case of adults. People with good memories are usually less original, and show indications of defective development. They are static in action and thought, thus showing that they have lost their early plasticity, which in turn indicates a loss of surplus energy.

With this explanation in the background we can gain an insight into the physical processes back of soul phenomena. We have in this another example of gland and nerve action. A new and more complex circuit is formed so that the soul censors the self as the self censors the primary impulses we call sex phenomena. The primary shock that excites activity first becomes imagination, then will, and then bodily action; otherwise stated, first the image, then the will, then the act. The complex is still of gland and nerve, for in image, will and act there are three separate gland flows brought into harmony by connecting nerve reactions. Depress the gland

action in the imagination and we get memory; depress it as will and we get habit; depress it in the body and senility results. The less the gland activity, the more the nervous control and the greater the mechanical control of life. The normal nerve always when excited repeats its former act. It holds the present firmly to the pattern of the past. Every lowering of vitality heightens this nervous control and increases the power of mechanical responses. Gland activity has no pattern. It never repeats itself exactly. Its power is in the blood flow, and any new content of the blood alters its action. When our glands are active our acts are patternless, and hence are not predetermined. We can thus be original even if we are not free. New combinations of emotion arise with each change in the composition of the blood. The image becomes wish, and the wish becomes action. The soul with its imagery controls instead of a mechanical self.

Rational thought is not a logical process but a psychic transformation. The concept that excites the most emotion excludes its opposite. The logically supreme concept is thus the emotionally superior concept. The self in struggle thus dominates through its emotional allies raising the level of consciousness to a point that excludes other motives. It is this tendency that deceives and falsifies. When the level of consciousness is high, thought seems unified, since the conscious emotions are those of struggle. When, however, the level of consciousness is lowered because of the absence of struggle, the old opposition reappears and normal motives reassert themselves. But they now seem not to come from the external world, but to spring from some inner source. A false psychology is thus created to meet this abnormal condition. 'Data' are now attributed to a subconscious origin that really has an external origin from which, however, it has been cut off by epochs of struggle creating so high a threshold of consciousness that they are submerged for a time and then divorced from their origins. They come into consciousness as dreams, because in the dream world the threshold of consciousness is lower than in waking hours. All this must be made clear before the disguises of self and the disruptive force of struggle is apparent. Nor can they in turn be understood without recognizing the ways in which the level of consciousness is raised and lowered by changes in blood pressure. When it rises the details of perception fade and what remains is the symbol of what

disappears. A single element of an original may thus become the symbol of the whole and be the form by which it asserts itself in consciousness.

My thesis can now be restated in a more scientific form. The elements of the mind are instinct and emotion. Instinct is a nervous mechanism that reacts to certain stimuli. These mechanisms are in the body while in consciousness there are certain emotions that arise in connection with the same stimuli. All emotions, however, are not a mechanism in the sense that instincts are mechanisms, but a flow of nutritive energy. They are the product not of nervous mechanisms but of gland activity. While they seem immaterial and unmechanical they are both, if we recognize that antecedent to the emotion there has been a discharge of some fluid into the blood by which the emotion is aroused and the consciousness fixed upon certain objects. If it can be shown that the injection of given fluid into the blood arouses one emotion and represses others, the material antecedent of emotion becomes apparent even if the dissection of the brain shows no nervous mechanism to accomplish the desired end. Believers in the mechanical character of thought have looked in the wrong quarter for a basis of their claim. The seat of our important mechanisms is in the blood and not in the nerve. When this is recognized the road to thought antecedents is open and its mystery solved. The three elements in thought activity are nervous instincts, nutritive discharges which figure in consciousness as emotions, and the trophic action in the brain.

Students of mind as mechanism have also gone wrong in assuming that as mind is superior to body, so mental mechanisms are superior to those of body. What seems more absurd than that a superior result could be obtained from an inferior mechanism? And yet this is the case. The mechanical reactions of the brain are of a low order. The action in one part arouses a reaction in another not by some superior coördinating mechanism, but by a passage of energizing currents through the plastic parts of the brain. Tracks are thus formed along which energy habitually flows. As an adjustive device this method works admirably, but viewed as a mechanism it is of a surprisingly low order. I doubt if the mind has many nervous mechanisms above the level of trophisms, and yet its emotional flows are so effective that the

result is of a higher order than any nervous mechanism could give.

When a man says I can do as I please, I do not contest the fact but the explanation. I admit that there is no material mechanism corresponding to what we call will. The will is not a mechanism, but a discharge. Its antecedents lie in the blood and not in the nerve. To get will I must generate more energy with its accompanying elation until the threshold of consciousness is so elevated that no other outlet remains. Will as action is increased energy and an accompanying emotional exaltation. What we do is not what we want to do, but we want to do what we are doing. A rise in energy makes a wish which grows as the pressure to do the act increases. This is the thought Dr. Freud has emphasized stated as a normal, instead of as an abnormal, phenomena. The censor is wish as well as the censored. They are rival flows of energy directed by the nutritive discharges in the blood.

Another confusion arises as to the mechanism of inhibition. The disciple of self-mastery asserts that he can withstand all these wish or nutritive flows. And he is right. But how does he do it? Is not inhibition as material as action with causes quite as measurable? We can find inhibitory instincts in many quarters and can readily discover how they act when mere bodily functions. They range all the way from nightmare to stage fright, from shamming death to the limping bird suddenly frightened by your presence. In each case there is a flow that stops action. Could a stage-frightened man have his pulse measured the physical nature of the change would become apparent. Could his blood be tested a new content would be discovered. No one doubts the physical origin of these manifestations, and if so, no one should doubt his power to make inhibitions as soon as he learns how to arouse these discharges. He must get the essence of stage fright or nightmare without their antecedents.

Originally these discharges were brought about by their relations to instinct aroused by external contact. The instinct came first, and the emotional flow followed. Now external contact is seldom of the kind to arouse the emotional flow. In their place we have their symbolic representation in consciousness through wishes and fears. They arouse the inhibition that under antecedent conditions came through external contact. It is therefore true that if

I want to inhibit I can inhibit, but I can only do it by starting a gland action that prompts inhibition. My inhibition is thus quite as material as activity. Just as I can make myself angry by thinking of anger, so I can stop action by arousing the wish for inaction. The seeming will, however, in both cases is not cause but effect. Measure the nutritive flows and the thought current could be predicted. Reading other people's thought will become a science when we get measures for every change in the blood.

CAUSES OF "TURNOVER" AMONG COLLEGE FACULTIES

By HUGO DIEMER, B.A., M.E.,

Professor of Industrial Engineering, Pennsylvania State College; Formerly Superintendent, National Motor Vehicle Company; Production Manager, Goodman Manufacturing Company, and Consulting Engineer.

When we look at the stupendous labor turnover in manufacturing establishments operating under traditional employment systems whose turnover is in some instances as high as 500 per cent a year, it would seem at first sight that an academic turnover of 40 per cent per annum is evidence of much better conditions in educational organizations than exist in industry. When we investigate the subject a little further, however, and reflect that the usual term of employment in colleges is for the academic year, and that all of the precedents and ethics of the profession are against changes during the academic year, we realize that the problem is a somewhat different one. We need also to bear in mind that the instructor in his relation to his students occupies a position analogous to that of a foreman or department head in industry, and that a change in faculty personnel of 40 per cent per annum finds its analogy in a change of foremen and department heads in industry of 40 per cent. The average cost of changing an employe in industry has been determined to range from \$50 to \$200, the subdivisions of this expense being:

- (a) Cost of hiring
- (b) Cost of teaching the new workman
- (c) Decreased production by the new workman
- (d) Work spoiled by the new employe

COST OF TURNOVER OF INSTRUCTORS ITEMIZED

It has been estimated that if we take into consideration municipal, state and federal appropriations and income from private endowments, as well as the money spent by the student himself, a fair cost for academic training is \$1.00 per recitation hour per student. Assuming that the average instructor handles twelve hours of work per week (most schedules being rather above than

below this figure), and that there are twenty-five students in each class, the average instructor would handle 300 student hours per week. Assuming that from thirty-three to thirty-four active weeks of work are done in the academic year, the expenditure from all sources for the instruction by the average instructor would represent a total outlay of approximately \$10,000 per annum. If an inexperienced instructor is only half as efficient during his first year as an experienced instructor, and assuming that the experienced instructor has 80 per cent efficiency, the net loss during the first year would be 40 per cent of \$10,000 or \$4,000 per instructor. In a faculty of 100 instructors with a turnover of 40 per cent per year, the total annual loss would be forty times \$4,000 or \$160,000 per annum of taxpayers' or parents' money. These figures take into account only the direct loss. The indirect loss is immeasurable since it represents the failure to develop potential economic and social efficiency in the student.

REASONS FOR CHANGE OF EDUCATIONAL WORK

The principal reasons for changing given by various men who have left educational work for other fields are as follows:

1. Insufficient pay
2. Insufficient opportunities for promotion
3. Their educational experience answered its purpose, namely that of a stepping stone
4. Artificial atmosphere
5. Too wide a variety of activities demanded

The reasons given by various department heads as impelling them to encourage men to accept outside positions are as follows:

1. No future for the man in teaching, even though he was competent
2. The man could not get along with students
3. The man could not get along with his associates
4. Poor teacher
5. Unfit for the organization

It is interesting to reflect what improvement in efficiency might be accomplished by approaching the problem in the same manner in which the employment managers have approached that of labor turnover. The employment manager considers:

1. The sources of supply and methods of securing new men
2. Methods of training and developing new men
3. Methods to be adopted to retain all promising men

SOURCES OF SUPPLY OF TEACHERS

With regard to sources of supply for academic teachers these may be enumerated as:

(a) Personal inquiries made by presidents, deans and department heads at educational and professional conventions. Joining various educational and professional associations has been frequently recommended to young instructors with the confidential statement that the conventions of such associations constitute quite an employment exchange. In fact in many of such conventions this by-product is more important than the main occasion, so far as many of the visitors are concerned.

(b) The second source of supply is letters of inquiry, addressed to college professors asking nominations from their acquaintanceship among alumni or instructors, and followed by personal interview.

(c) The third source of supply is advertisement in educational, professional or trade journals, followed by correspondence and interviews.

(d) The fourth source of supply is the teachers' or professional employment agencies.

While the cost of hiring an ordinary laborer in an industrial employment bureau may be as low as 50 cents to \$1.00 per man, it is evident that when we calculate the cost of the time, correspondence and traveling expenses of higher officials in educational work in filling a vacancy, the total is apt to run not much below \$50 per position to be filled.

METHODS AND STANDARDS OF SELECTION

After having considered the sources of supply, let us consider methods and standards of selection.

Professor H. Wade Hibbard, head of the Department of Mechanical Engineering at the University of Missouri, has listed 209 activities of a professor. He has boiled these down for a member of an engineering faculty to 84, as follows:

Teaching in	Engineering curricula and progress
Lecture	Other engineering schools
Recitation	Relations with the profession
Laboratory	College catalog
Drafting	College and department circulars
Computation	Engineering experiment station
Field Work	Engineering bulletins
Seminary	University extension
Examinations on his own work	By correspondence
Class discipline	By centers
Friendship with students	Summer school
Breadth of culture for professor, and	Advertising and public sentiment
its encouragement for student	Student grades
Research	Grading methods
For Professor	Electives for engineers
For Students	Schedules for classes
Methods of student study	Use for rooms
Student engineering society	Lighting plans
Inspection tours	Supervision of teaching
Foreign lecture	Improvement of teachers
Summer positions	Employment of new teachers
Graduate positions	Acquaintance with foreign teachers
Alumni list	Pedagogical progress
Employment bureau for alumni	Work in engineering professional societies
Registration	Work in educational societies
Issuing stores	Writing
Issuing apparatus	Problems of
Laboratory deposits	Buildings
Control of student activities	Grounds
City moral cleanliness	Janitors
New apparatus	Power house management
Needs	Problems of
Choice	Heating
Markets	Lighting
Installation	Water service
Regular supplies	Fire
Repairs	Prevention
Repair shop	Extinguishment
Inventory	Bookkeeping
Deterioration	Appropriations
Out-of-dateness	Personal typewriting
New library books	Hektographing
Use of library	Lantern operation
Catalog library	
High school	
Standards	
Curricula	

Various department heads will lay emphasis in varying stress on certain of these activities, and measure candidates' acceptability by their fitness as they see it in such of these activities as they deem most important. Some of the activities listed require an executive type of mind, some a promotive type, some an accounting type, some an analytical type, some a judicial type, some a generalizing, and some a detailist type of mind. Not only is the range of mental requirements so great that no single individual can meet them, but the temperamental variations are equally wide. Success in some of these activities demands a strong vital temperament; in others a quick, nervous, energetic temperament is required; others require a calm, phlegmatic temperament, and still others a sympathetic, emotional temperament.

Assuming that the candidate's mental equipment and temperament are satisfactory, he must still pass the tests of good build, pleasing address, individual personality, poise, readiness in speech and acceptability as a public speaker. The last named ability may have to vary from capacity for plain straightforward practical talks free from histrionic attempts and artifices so as to meet the demands of audiences composed of practical men in commerce or industry on the one hand, to a highly histrionic type, well versed in all the arts of sophistry to meet the requirements of so-called more cultured audiences.

Finally we must measure well the applicant's ability to develop interest and enthusiasm and to impart information in such a way that it is not merely a filling-in process, but also a drawing-out and developing of the student. This is more a process of prospecting than direct measurement, to apply a geologist's analogy. Still we can assume that when certain other elements exist which we can measure there is a likelihood of teaching ability being present.

As we look over our long list of activities, however, let us bear in mind the scarcity of the all-around man, if he exists at all. So long as our colleges have not adopted the principles of scientific management as they relate to functional control, we can at least apply them departmentally, since in most colleges the department head is the employment manager, his nominations being subject usually only to confirmation by higher officials. In a department numbering say ten men, it would be possible to assign a selection of eight or nine of Mr. Hibbard's functions outside of direct teaching

work to one man, giving each instructor in this way an opportunity to participate in some few of the multitude of extraneous duties which under traditional systems are handled wholly by department heads or other executives. In filling a vacancy we might then emphasize the traits requisite for the successful carrying on of the more limited line of activities.

Unquestionably a more careful selection based upon scientific analysis of the requirements of each position and applying some standards of measurement to candidates would result in a more efficient selection of candidates with a tendency to reduce the annual turnover.

DEVELOPMENT OF AN INSTRUCTION STAFF

Coming next to the question of development of employes, we find in progressive industrial centers and in large industrial corporations educational classes of salesmen, of accountants, of cost clerks, of time study men, of foremen and superintendents, of credit men, of traffic managers, etc., all engaged in studying the most recent literature and best information relating to their fields of work, the employing corporations for the most part meeting the expenses of securing lecturers and teachers for such classes. It would not be distinctly a new feature in educational practice to carry on this sort of training of instructors within the plant, and yet such practice is exceptional rather than the rule, as it should be. Educational traditions it is true prescribe a leave of absence of from one to three years to obtain a Ph.D. degree at some other educational institution, preferably in some foreign country. The financial expenditure involved in this procedure is such that only those who have private incomes, or are willing to suffer extreme privation for a number of years, are able to participate in this kind of development process. If the foremen's meetings or the cost accountants' club can be scheduled during work hours by factories, similar educational activities for the benefit of instructors can be scheduled as a regular procedure of colleges. Such training should aim to develop not only higher technical ability, but should consider the pedagogic methods and ideals of the individual subject, personal efficiency and fitness for the organization. In order to develop department heads, there should be a much wider extension of the practice of exchanging professors, accompanied by an extra stipend to cover the expenses of

travel and change of location. The heads of professional or industrial departments should be encouraged to take a year's leave of absence to work at their profession or in industry for pay with the idea that they would return full of knowledge as to the latest professional and industrial practices.

RETENTION OF INSTRUCTORS

Having considered now the selection and development of instructors, let us consider the matter of retention. In industries and the professions, tabulated income curves show that the capable man's earnings increase steadily up to the age of sixty and even beyond. In college teaching a man usually reaches a professorship somewhere between the age of thirty and forty, and thereafter his income curve remains a horizontal line until his death. It is no wonder therefore that we hear the term "blind alley" applied to the profession of college teaching. The remedy is self-evident. Boards of trustees of colleges should apply the same principles of compensation to their faculties as they would apply in industrial corporations of which they might be directors. Long tenure of office, accompanied by effective results, should be accompanied by periodic increases in salary even after professorial rank has been reached. There are many department heads in colleges who see young men graduating under them whom they have been instrumental in placing not only in their first positions, but later into better positions, earning salaries in from five to ten years after graduation aggregating fifty or one hundred per cent higher than the professor's salary.

I have laid particular stress upon the case of the professor, because the subject of the underpaid instructor and assistant is already well known, while very few persons realize that the professor or department head is also underpaid and that this fact encourages the men of the instructor class to seek other fields. Moreover, increasing demands are being made of the professor for traveling expenses, to attend conventions, to make contributions to a variety of worthy causes and to maintain a social and professional "front." From my knowledge of existing industrial and professional conditions, I should say that as industrial salaries rule at present, no college assistant or instructor should be employed at a starting pay of less than \$1,200 for the academic year. In a first-class institution

he should have opportunity for regular annual advancement to a salary of \$1,800. As an assistant professor, his salary should be regularly increased for efficient service until it reaches \$3,000. In the associate professor's class, the range should be from \$3,000 to \$4,000. In the full professor's class, the range should be from \$4,000 upward, with assured advancement, until the income curves of department heads in educational work are parallel with those of department heads in industry or of professional men of equal accomplishments. If Europe can pay college professors \$10,000 a year, why not America?

HANDICAPS TO EFFICIENCY

Thus far I have discussed the question of assured prospects of promotion and adequate pay, which employment managers tell us are essential for retention of desirable employees. These same employment managers tell us also that we must provide agreeable working surroundings and conditions leading toward contentment and happiness. Several prominent industrial employment managers emphasize the importance of according freedom of speech and opinion to all men. The progressive department head in a college will heed this note as a sign of the times and encourage wider participation by all of his men in council which should be held to determine not only matters of policy and methods, but also such as relate to appointments.

Lack of the customary facilities provided in ordinary business and industrial practice for clerical, drafting and stenographic assistance is one of the conditions of academic inefficiency widely prevalent. In this respect, our colleges might well follow the example of corporation schools who do all they can to develop the real educational powers of their teachers by providing them all of the clerical, drafting and stenographic assistance needed. Academic traditions sanction the purchasing of a \$200 scientific instrument, used two or three times a year, as a necessity, while the purchase of a dictaphone to increase the efficiency of an instructor twenty per cent would be looked on as an unpardonable luxury.

Another condition affecting the efficiency of instructors is the lack of provisions for private study. A recent book on efficient living claims that the home life of college professors is made far from ideal by the necessity imposed on them of carrying the day's work

into the home and the maintenance of a private study—a sort of a *sanctum-sanctorum* in the residence. Even this safe retreat may not exist if the family has happened to grow considerably in number. Rooms should be provided in college buildings in which instructors might secure genuine privacy for study purposes, being entirely free from business routine or interviews during such periods.

This discussion would not be complete without some mention of old age or retirement pensions. It has been argued that although such pensions might be entirely proper for teachers in primary and secondary schools, it would be letting down caste bars to admit that college professors really required such pensions. Andrew Carnegie intimated that while he would take care of certain institutions, he considered it the duty of the states to take care of the matter of pensions in state institutions. There does not seem to be any valid reason why a railway conductor, engineer or fireman should be entitled to an old age pension any more than a college professor.

I have endeavored to list such analogies between industrial and academic conditions relating to turnover as present themselves to a man who has come into academic work after having filled a position as factory superintendent and production manager.

BOOK DEPARTMENT

THE BUSINESS MAN'S LIBRARY

ACCOUNTING, AUDITING AND COST KEEPING

SCOVELL, CLINTON H. *Cost Accounting and Burden Application*. Pp. xiv, 328.
Price, \$2.00. New York: D. Appleton and Company, 1916.

In some promising books on cost accounting which have appeared, an attempted summary of a great variety of opinion has left the reader at sea as to the opinion held by the writer. Scovell's treatise is clear and definite. On all the crucial points he states his opinion clearly and gives a reason for it. As a text in the classroom it would need amplification and discussion, supplemented by exercises and problems. It will, however, prove valuable for reference and classroom use as well as for the practicing accountant.

Among the controversial subjects which the author treats most fully are the subjects of Interest Charged to Cost, and Unearned Burden. He believes that interest should be charged to cost because this treatment proves useful both from the point of view of managerial policy and price setting. He believes in charging interest both on capital owned and borrowed, but he is not in favor of making separate charges for these two classes of interest. The offsetting credit for the interest charges is an account called Interest Charged to Cost. The rate for such an interest charge is to be set by the reasonable expectation of return from the capital if invested in high grade securities where no manufacturing or trading risk is taken.

The author would probably feel, however, that his chief contribution lies in his treatment of Unearned Burden. He works out a machine rate for all production centers on the basis of their operation for a standard number of hours each year. This standard is worked out on the basis of the experience of the plant. "But with a curtailment of production, resulting in idle equipment not used in production, there will be an accumulation of burden charges which is not charged to the cost of the product. This expense is known as unearned burden and is not properly a part of manufacturing cost, although it must be recognized in the determination of a proper selling price. . . . Unearned burden, known as a separate total, serves as a true barometer to indicate the effect of the industrial situation outside the shop on the business in question" (p. 176). Mr. Scovell would charge the unearned burden to the profit and loss account but not to the manufacturing account. The author indicates a significance of unearned burden for competitive costs. He has really laid the foundation for a complete and critical statement of competitive costs, but he does not perform this larger task. In the latter part of the book Scovell applies the principles he has developed to the accounting of several industries.

The work at once is both scholarly and practical, and should rank high among the books in this country on the subject.

SPURGEON BELL.

University of Texas.

WEBNER, FRANK E. *Factory Accounting*. Pp. xii, 345. Price, \$3.30, ppd. Chicago: La Salle Extension University, 1917.

Frank E. Webner's recent book entitled *Factory Accounting* forms one of the texts on higher accountancy of the La Salle Extension University. As it is generally understood, the primary use to which all of these texts are to be put is correspondence instruction. Perhaps a growing secondary consideration in offering them to the public is that they may supply a need, very real in some quarters, for satisfactory texts for school and collegiate instruction.

As should be the case, to carry out the purpose indicated above, the present volume is better adapted to its primary use, although providing a fairly satisfactory text for classroom use. Mr. Webner's broad experience in the field of practice makes him an authority as to what is needed for preparation for that line of work. Although he has been a frequent lecturer before many of the largest universities in the country, he does not realize, or, realizing, has not fully overcome all of the difficulties encountered when trying to present to students a difficult subject of which they know little from actual experience. However, in an effort to meet this difficulty the author has vitalized the book by an elaborate use of charts and illustrations which should bring home to the student the many intricacies of the subject if not, in all instances, clarifying the difficult points. The present day tendency to visualize everything by means of charts and graphs has led in a few places to a charting of things which do not lend themselves well to that method of presentation and so has cheapened the product. Fortunately, instances of this are not numerous in the present volume.

Mr. Webner's discussion of the human element is very good and calls attention to a subject which needs more attention than it generally receives.

The content of the book is sufficiently indicated by the four main divisions: Organization, Controlling Records, Industrial Classification, and Production Elements.

One acquainted with Mr. Webner's earlier volume, *Factory Costs*, misses in the present volume much of the well thought out and philosophic treatment of the troublesome problem of burden application so ably presented there. The difference in scope and purpose of the two books accounts for its omission from the present volume.

On the whole *Factory Accounting* is an able presentation of the subject of costs, is somewhat broader than the usual treatment, and should prove a satisfactory text for students.

R. B. KESTER.

Columbia University.

BANKING, INVESTMENTS AND FINANCE

MOULTON, HAROLD G. *Principles of Money and Banking*. Pp. xl, 502. Price, \$3.00. *Idem. Exercises and Questions for Use with "Principles of Money and Banking."* Pp. xi, 95. Price, 50 cents. Chicago: University of Chicago Press, 1916.

PHILLIPS, CHESTER A. *Readings in Money and Banking*. Pp. 845. Price, \$2.10. New York: The Macmillan Company, 1916.

These two books represent a compilation of excerpts from standard texts and selections from current writings on money and banking. Owing to the wealth and vitality of the discussion on finance that has occurred during the past five years, the inclusion of the selections from current articles is perhaps the more valuable feature.

Neither volume pretends to be an exhaustive analysis nor an original treatment of specific phases of monetary and banking problems, but what each lacks in coherence of treatment is more than compensated for by the wide range of pertinent subjects that are covered.

Moulton in his *Principles of Money and Banking* has related a series of selections whose worth is derived rather from their suggestiveness than their unity. The discussion in Part II concerning the nature and functions of banking is well devised.

Phillips' work is handled in a somewhat different fashion. Instead of taking the excerpts and incorporating them into the text as individual units, he correlates and welds together, with the semblance of unity, different articles pertaining to the same subject. Naturally, this enables the student, and all others who are studying the elements of finance, to obtain a clearer and more comprehensive grasp of a particular problem. The chapters on the foreign banking systems are very opportune.

For collateral readings and for suggestive outlines for class work both volumes fill a long-felt need.

THOMAS CONWAY, JR.

University of Pennsylvania.

FOREIGN TRADE AND COMMERCIAL GEOGRAPHY

FILSINGER, ERNEST B. *Exporting to Latin America*. Pp. xiv, 565. Price, \$3.00. New York: D. Appleton and Company, 1916.

Exporting to Latin America is one result of the author's long search for trade information to aid the foreign sales of a moderate sized St. Louis shoe factory. Mr. Filsinger's situation was typical of that of many manufacturers who recently have felt the need of a foreign market which might balance the ups and downs of the home trade.

The book gives evidence of exhaustive and systematic study of that flood of trade information steadily pouring in from the United States Consuls throughout the world, portions of which are contained in the daily commerce reports of the United States Department of Commerce and of the more extended reports of

special investigators of the Department of Commerce, as well as current literature on the subject. Added to this is the author's own practical experience and judgment, expressed with no personal note. The whole is admirably edited, the chapter titles and subheadings being practically the questions which every beginner in foreign trade sooner or later will ask, and on which even experienced merchants and manufacturers occasionally require enlightenment.

An especially interesting chapter is that on Export Commission Houses and Agents, for there is much misunderstanding and some controversy over the precise function which these merchandising agencies can perform, what kind of trade can best be developed through them, and what most advantageously by direct foreign sales methods on the manufacturer's part. There are indications of improved understanding between manufacturers and export houses, partly through discussion of their relationship at several national foreign trade conventions. Mr. Filsinger's outline of the function of the export commission house is followed with the chapter on Traveling Salesmen, General and Local Agents, which is of particular interest to manufacturers desiring to market their product by direct representation overseas. This includes suggestions as to obtaining foreign agents by correspondence.

In view of the Administration's advocacy of the Webb Bill, authorizing coöperation among American exporters, the following is of interest to the manufacturers and merchants who desire to coöperate in order to meet more effectively combinations of foreign competitors which are not only permitted, but encouraged, by foreign governments, and to offset the operations of combinations of foreign buyers leagued to depress the prices of American products:

"It has been well established that for certain handlers of allied lines, coöperative effort is the most effective means for obtaining a foothold in Latin-American trade. When a group of such merchants can be brought together on a thoroughly sound basis, their combined efforts often prove successful."

In the event the Webb Bill, which the Senate failed to bring to a vote in the last Congress, is enacted, Mr. Filsinger suggests "how groups may be formed":

"Manufacturers who believe their products can find a demand in Latin America may invite other firms of like opinion to coöperate. In arranging such groups extreme care must be taken not alone in the selection of the lines but also in the arrangements of the expense. It would be unwise for manufacturers of hardware, millinery, leather, paints, and hats to combine. On the other hand coöperation of concerns, all of whose products were sold by hardware stores, would prove logical. Such manufacturers might produce screws, small machinery tools and similar articles. Another group might be formed by the producers of ladies' apparel, underwear, hosiery, trimmings, millinery, et cetera. A third group might include the manufacturers of leather, dressings, findings, and other articles used by shoemakers. Unless the grouping were carefully done, the efforts of the representative would be dissipated, inasmuch as too much time would be lost to interest the principal importers of these various products. On the other hand, when the attention of the buyer had been obtained by the representative of a group of kindred manufacturers, the possibilities of sales would be much greater."

Further useful information is given on the division of business, distribution of expenses, and specialized salesmanship, advertising and "follow-up" methods. Space does not permit even an enumeration of the other phases of this interesting book,—a valuable addition to a quite substantial bibliography developed by the painstaking work of Hough, Aughinbaugh and other students of Latin-American trade problems.

ROBERT H. PATCHIN.

National Foreign Trade Council, New York City.

UNITED STATES FEDERAL COMMISSION. *Report on Coöperation in American Export Trade.* Part I, Pp. xv, 387. Part II, Pp. xxiii, 597. Washington: Government Printing Office, 1916.

This report contains the results of an investigation made by the Federal Trade Commission. It calls attention to the importance of the foreign commerce of the United States and the need of understanding the conditions our exporters must meet in competing for world trade. A special study was made of the effect of foreign combinations, private and government-aided, on the export trade of the United States.

Part I considers at length competitive conditions in international trade, facilities aiding this trade, and how coöperation in particular industries in foreign countries has been developed. Part II consists of consular reports, extracts from hearings of the Commission, and examples of price and export agreements of foreign combinations. The work contains valuable tables and charts.

The Commission has made a thorough and much needed study of conditions in international trade.

W. E. W.

INDUSTRIAL MANAGEMENT

SHAW, A. W. *An Approach to Business Problems.* Pp. xxvi, 332. Price, \$2.00. Cambridge: Harvard University Press, 1916.

JONES, EDWARD D. *The Administration of Industrial Enterprises.* Pp. vi, 442. Price, \$2.00. New York: Longmans, Green and Company, 1916.

A hasty survey of these two books would give the erroneous impression that they were much alike; both treat the problem of factory equipment, both discuss the formation of an administrative organization, both deal with the process of mercantile distribution. However, the casts of mind, the purposes of the two writers and the arrangement of material are so utterly dissimilar that the resemblance of the two volumes ceases with the tables of contents.

Mr. Shaw was in a philosophical mood when he wrote his book. He searched his mind to discover a universal classification of industry molded on the living activities of business, to find a uniform method of approach to all the diverse forms of industrial problems. Out of the welter of old economic generalizations he endeavored to formulate new ones, reversing the ancient adage, for he poured old wine into new bottles. Mr. Jones, on the other hand, showed scant courtesy to

the philosophy of business, for his mind was too intent upon telling the story of the best existing practices.

The purpose Mr. Shaw had in mind was to make a start toward a science of business, comparable, perhaps, to the science of chemistry; that is, he hoped to isolate from a large number of generalizations concerning business a few that would have the standing of laws, so that, given certain data about a business one might predict certain results. Dr. Jones had no such mighty task; his purpose was to relate simply and clearly the practices in business that experience taught were most beneficial. It is true that Dr. Jones desired to make it unquestionable that scientific method was applicable to business, and also that the concepts of welfare and service had a definite place in industry, but he had no especial intellectual ax to grind.

Unlike Mr. Shaw, Dr. Jones has given us a well organized work. It is a straightforward, connected story. As a textbook, it ought to be well received, and as a part of a business man's library, it should prove an asset.

MALCOLM KEIR.

University of Pennsylvania.

LABOR LEGISLATION

BARNETT, GEORGE E. and McCABE, DAVID A. *Mediation, Investigation and Arbitration in Industrial Disputes.* Pp. viii, 209. Price, \$1.25. New York: D. Appleton and Company, 1916.

This book is intended to offer in condensed, summary form a review of the experiences of the Massachusetts, Ohio and New York State arbitration systems, and the proposals submitted by the authors to the United States Industrial Commission for a State and national system of mediation, investigation and arbitration.

It contains much illustrative matter describing the activities of these three State boards up to 1914. It points out the highly satisfactory and successful results of mediation, the almost entire absence of arbitration outside of the shoe industry in Massachusetts, the growing trend towards investigation of disputes, and the need for a scientific, comprehensive statement of principles to be followed in government settlement of disputes, in order that the experience of the successful States may be generally adopted elsewhere. The systems described are not presented as "cure-alls." Clearly-marked limits, even to mediation, are set forth. The attitude of the authors is impartial and practical, and the treatment of the subject is scholarly. It might be wished that the results of the last three years be included in the book. The appendices contain the Newlands Act and the recommendations of the Industrial Commission on mediation, arbitration, etc.

J. T. Y.

MANUFACTURING INDUSTRY

COMPTON, WILSON. *The Organization of the Lumber Industry.* Pp. x, 153. Price, \$2.00. Chicago: American Lumberman, 1916.

The author has given us a history of the lumber industry and its organization in the United States. By means of an analysis of prices, he has sought a solution

of the economic problems associated with lumber from tree to ultimate user. A rather novel method of employing *relative* prices was made necessary by the character of the source material to which the author had access. One important chapter treats the organization of the lumber industry for production; a second deals with the organization for distribution, while a third has to do with the ownership and prices of standing timber.

A reader becomes somewhat annoyed that an otherwise careful work is impaired by the ineffectiveness of the essential charts. The author frequently tries to show too many things on one chart and forgets to make the cross-square lines of the graph paper. As a consequence, the charts fail to convey the maker's idea and the curves hang unattached in mid-air. In other respects the book is unusually good.

M. K.

COTTER, ARUNDEL. *The Authentic History of The United States Steel Corporation.* Pp. x, 231. Price, \$2.00. New York: The Moody Magazine and Book Company, 1916.

This book narrates the principal events preceding and leading up to the incorporation of the greatest industrial enterprise in the world. It also sets forth the objects and policies of the company and the results therefrom upon labor and industry in general. Most of the story is drawn from the testimony in the government suit for the dissolution of the Corporation, but this already published material is supplemented by information obtained personally from the promoters and officers of the Company. Some of the salient features of the book are descriptions of the Tennessee Purchase, the development of export trade, the integration of the Corporation, the artificially created steel towns and the movement for safety, sanitation and welfare within the steel works.

When one takes into consideration that the book is dedicated to Elbert H. Gary and that the author is frankly prejudiced in favor of the Corporation, and when one makes allowances for such freely admitted bias, one finds that there is much in the book that is commendable. It might be unfortunate to give wide circulation to this "authentic" history if it were the only one extant, but as long as one may consult Bridges' *History of the Carnegie Steel Company* for the facts that Cotter left out of his particular work, then it is highly desirable in the interest of fair-mindedness to have a book that gives a plain and interesting statement of the Corporation's side of the case.

The book is admirably illustrated.

M. K.

STATISTICS

DUDLEY, WILLIAM A. *Finance and Life Insurance.* Pp. 227. Price, \$5.00. Mexico, Missouri: Missouri Printing and Publishing Company, 1916.

The plan of the book is excellent, but the workmanship is extremely careless. Mr. Dudley's purpose is the brief presentation of the elementary principles of logarithms, interpolation, probability, compound interest and discount, annuities

and life contingencies,—an excellent idea, for where is the business man who, though he has not the time or training to study these topics thoroughly, does not often find need for an elementary knowledge that will enable him to make intelligent use of interest, discount or bond valuation formulae?

His approach to each of these subjects is simple and direct, but his careless and incorrect statement of many formulae makes it a dangerous book for the beginner to use. For instance, on page twenty-five in the chapter on compound interest he transforms the equation $S = (1+i)^n$ to express the value of "i" in terms of the other quantities as follows:

$$i = \sqrt[n]{S} - 1 = \frac{\log S}{n} - 1.$$

It is apparent that $\frac{\log S}{n} - 1$ does not equal "i".

What he intends to say is

$$i = \text{antilog} \left[\frac{\log S}{n} \right] - 1.$$

No less than eight errors were found in this particular chapter.

The book contains apparently valuable tables of interest, discount and annuities at interest rates from $\frac{1}{4}$ to 10 per cent, but errors found elsewhere make one hesitate to depend on the accuracy of these tables.

B. D. M.

TRANSPORTATION

BROWN, HARRY G. *Principles of Commerce*. Pp. xxiii, 207. Price, \$1.75. New York: The Macmillan Company, 1916.

Part I analyzes the laws of money and describes in detail the mechanism of foreign exchange. Part II explains the advantages of foreign trade and presents an indictment of protective tariffs and other artificial barriers to the natural development of commerce. Part III contains a discussion of the theory of transportation rates.

T. W. V. M.

DROEGE, JOHN A. *Passenger Terminals and Trains*. Pp. vii, 410. Price, \$5.00. New York: McGraw-Hill Book Company, 1916.

This work is a worthy companion to *Freight Terminals and Trains*, by the same author, published in 1912.

Of the many improvements in all branches of the railroad service which have taken place in recent years none has invited wider attention than the improvements of the equipment employed in the transportation of passengers. The huge passenger terminals in the leading large cities, the great number of new stations in smaller cities, the progress of electrification, the introduction of steel cars of varying types with improved methods of heating, lighting and ventilation, are striking testimonials of the efforts of the carriers to provide a higher degree of comfort and convenience for the traveling public. In addition to these more obvious evidences

of progress are countless improvements in the mechanical equipment connected with train operation, and in the organization of the operating service, which help to solve the difficult problem of handling the rapidly growing passenger traffic with speed, promptness and safety.

This volume contains an interesting description of the physical equipment of the passenger service, and tells how it is operated. Because of the extreme diversity of practice in construction the author has found it impossible to describe in detail all the important terminals of the country, but by the judicious selection of certain prominent types for detailed discussion, and by calling attention to the unique features of particular variations, he has succeeded in presenting a remarkably comprehensive picture of the entire passenger service. A special chapter is devoted to the passenger terminals of New York City, and another to the trains and terminals of foreign countries.

Not the least interesting feature of the work is the large number of excellent cuts, charts and diagrams of virtually all the important passenger terminals of the United States.

T. W. VAN METRE.

Columbia University.

NELSON, JOHN H. (Compiled by.) *Interstate Commerce Commission Law*. Pp. 168. Price, \$1.00. Washington: John Byrne and Company, 1916.

PHELPS, EDITH M. (Compiled by.) *Selected Articles on the American Merchant Marine*. Pp. xxviii, 218. Price, \$1.25. *Idem. Selected Articles on the Government Ownership of Railroads*. (3rd Ed., rev.) Pp. xxxvii, 201. Price, \$1.25. White Plains, N. Y.: The H. W. Wilson Company, 1916.

These volumes are two among the many that comprise the *Debaters' Handbook Series*. They contain a brief or outline of both sides of the following resolutions: (1) that the United States should have a government-owned merchant marine, and (2) that the United States should own and operate its interstate railways. Each volume contains a bibliography and a number of selected articles, reports or papers by writers on both sides of the questions at issue.

The volumes do not constitute additions or original contributions to the literature on government ownership. They, however, present reprints of many standard articles and papers in a convenient form, and indicate to the student or debater where more detailed information may be obtained. The bibliographies were carefully selected so as "to give the reader access to the most usable and most easily obtainable material."

This new edition of *Government Ownership of Railroads* contains a number of recently published articles and a fully revised bibliography.

G. G. H.

ECONOMICS

CANNAN, EDWIN. *Wealth: A brief Explanation of the Causes of Economic Welfare* Pp. xxiii, 279. Price, 3s. 6d. London: P. S. King and Son, 1916.

FETTER, FRANK A. *Economics*. (Volume II, *Modern Economic Problems*.) Pp. xi, 498. Price, \$1.75. New York: The Century Company, 1916.

The arrangement of this two-volume text on economics is apparently dictated by the present demand in many colleges for a one-semester course in the theory of economics, followed by a possible second semester's work taking up the general applications of the theory. Professor Fetter's second volume meets this existing demand for a text suitable for a continuation course in general economics.

The title, *Modern Economic Problems*, is scarcely adequate to cover the scope of the work. A large part of the book is devoted to a description of existing economic institutions with appropriate historical settings for each. This descriptive matter is valuable for many purposes other than the solution of the particular problems brought forth by the author.

In most instances, the author has succeeded in bringing out the economic laws at work rather than the surface phenomena connected with the problem. While occasional inaccurate statements appear, their number has been reduced to a minimum. The sentiment of the book is thoroughly modern and progressive, but the policies advocated are based upon scientific principles throughout rather than upon the popular reform policies of the hour.

The wisdom of confining references to other works, and bibliographical material in general, to a separate manual, may be questioned. Many readers of the text will, presumably, never see the *Manual* but still will need guidance to further study of those problems in which they are particularly interested.

On the whole, the book may be commended to those seeking scientific instruction rather than propagandist literature.

W. I. K.

GIRAULT, ARTHUR. *The Colonial Tariff Policy of France*. (Edited by Charles Gide.) Pp. viii, 305. Price, \$2.50. New York: Oxford University Press, 1916.

Arthur Girault, Professor of Political Economy at the University of Poitiers, presents his careful investigation of the question, "What customs' régime should control the relations between a colony and the colonizing state on the one hand, and foreign countries on the other?" Although the thesis is general in terms, the material deals exclusively with French colonial policy. The author explains that two systems may be followed: one of exclusion, which arouses the jealousy of others and discontent of the colonies, thus doubly compromising the peace of the world, or a liberal policy, that of the open door or tariff personality, which removes from other nations all pretext for jealousy. This is likewise the best way to maintain friendly relations between the colonies and the mother country.

Part I is an investigation of the evolution of the colonial tariff policy of France. In that policy are shown six more or less clearly defined stages in French colonial policy and a chapter is given to each: (1) The ancient régime until 1789 was dominated by the theories of the mercantile system of colonial monopolies, privileged companies and exclusion. (2) The Physiocrats and the Revolution brought liberalism. (3) Under Napoleon the policy of exclusion was restored, but without privileged companies, and lasted until the second Empire. (4) In 1866 under the free trade influence of the Manchester School, colonial tariff autonomy was adopted. (5) The fall in prices and the protective tariff agitation in the eighties ended with the law of January 11th, 1892, which established a customs' union. It regards the colonies as a territorial part of France. This established free trade between France and most of the colonies, but subjected the colonies to the same high tariffs as France in commerce with non-French countries. (6) The recent movement is towards a policy of "tariff personality." Each colony should have its tariff adjusted according to its own peculiarities.

In part II, the results of the colonial tariff policy in France are shown by analyses of the good or bad effects of tariff assimilation *vs.* tariff personality, in the case of each colony. The author concludes that with the exception of Algeria, which under assimilation has actually become a part of France, all the other colonies, especially Indo-China, have been injured by this policy. Tariff assimilation has been a delusion. It has been inflexible. A coat will not fit every man regardless of size and age. The colonies differ from one another and from France. Each must be treated according to its personality, whether the tariff adopted be protectionist or liberal. The development of the sales from the mother country to the colonies depends upon the purchasing power of the colony. If the colony is prosperous its trade will increase in all those commodities which the mother country is able to supply. The colony should be left free to buy and sell all other commodities in the best market.

R. S. MacELWEE.

Columbia University.

JUGLAR, CLEMENT. *A Brief History of Panics* (trans. and ed. by De Courcy W. Thom). Pp. 189. Price, \$1.00. New York: G. P. Putnam's Sons, 1916.

A third edition of this standard work is most welcome. The second edition brought the study through the year 1891 and this one brings it down to date. The editor, Mr. De Courcy W. Thom, has himself prepared about one-half of the volume.

E. M. P.

POLITICAL SCIENCE

BARKER, J. ELLIS. *The Foundations of Germany*. Pp. ix, 281. Price, \$2.50. New York: E. P. Dutton and Company, 1916.

The present volume is complementary to the author's earlier volume *Modern Germany*, the fifth and enlarged edition of which appeared in 1915. The latter deals exclusively with recent political and economic problems of Germany, while

the volume in hand undertakes to set forth the principles that have guided German statesmanship from the time of the Great Elector down to the present day. Special stress is laid upon the statecraft of Frederick the Great, and numerous quotations are made from his writings to illustrate the political and moral principles of the ruler who bestowed upon Prussia the ideal of a military state. Chapters IX-XIII contain the French text of important state papers in which Frederick's ideas are embodied. In addition to the chapters dealing with the past there is a chapter dealing with the policy of Bismarck and William II, perhaps the most valuable in the book, and chapters dealing with the causes of the war, Germany and Turkey, and the German Colonial Empire. The chapters are for the most part a reprint of articles previously published in English magazines, with the result that they are loosely strung together, they leave many gaps in the narrative, and neither in form nor in substance can they be said to bear out the pretentious claims made for the volume in the preface.

C. G. F.

DAVIS, GEORGE B. *The Elements of International Law*. (4th ed., rev.) Pp. xxiv, 668. Price, \$3.00, New York: Harper and Brothers, 1916.

In this edition, there has been no attempt to carry out a thorough-going revision. Few changes have been made in the text, although the first chapter has been rewritten to include a rather extensive list of early writers on international law. The most valuable additions are those in the appendix. There the Declaration of London, which is not mentioned at all in the text, is printed in full, with an introduction and very interesting notes indicating how far its provisions were observed, modified, or disregarded by the belligerents during the first year of the European War. There is also a table showing the signatures, ratifications, adhesions, and reservations to the conventions and declarations of the first and second Hague Conferences. Other new features of the appendix are the text of the United States-Santo Domingo extradition treaty of 1910, and very brief notes regarding the transfer of enemy merchant vessels to a neutral flag, the arming of merchant vessels for defense, the use of aircraft in war, and wireless telegraphy. A list of the most recent collections of treaties and documents and of other important recent works on international law has been added to the original bibliography.

D. G. M.

GIBBONS, HERBERT ADAMS. *The New Map of Africa*. Pp. xiv, 503. Price, \$2.00. New York: The Century Company, 1916.

Those who knew Mr. Gibbons' *The New Map of Europe* will welcome this companion volume, which gives a sketch of European colonial expansion and colonial diplomacy for the period 1900-1916. The text is made more easily understandable for the general reader by a well-chosen series of maps.

Several of the chapters have already appeared as articles in magazines. The book makes no pretensions to being documented and does not enter deeply into the many controversial subjects in the field. It is intended to give a popular, understandable first sketch of social and economic conditions in Africa and an

outline picture of the international rivalries in the continent during the first decade and a half of the present century. The author has traveled widely in the lands he describes and has had personal acquaintance with many of the men who have been prominent in their development.

The chapters are to a large extent independent of each other. No attempt is made to treat the subject historically or by a grouping of the various international interests. For him who looks for a well-organized exposition of the causes of developments in Africa, therefore, the volume leaves much to be desired, but for him who seeks a vivid picture of present developments, Mr. Gibbons' description will prove both entertaining and instructive. For those who are already familiar with the chief features of the scramble for Africa, the most valuable portions of the book are those which discuss conditions in the less important and often neglected regions such as the east coast and the Portuguese colonies.

C. L. J.

HOLDICH, SIR THOMAS H. *Political Frontiers and Boundary Making*. Pp. xi, 307. Price, \$3.25. New York: The Macmillan Company, 1916.

The most striking feature of this survey of the problems involved in boundary making is the author's comprehensive grasp of geographic and population questions from Patagonia to the Afghan highlands and from ancient Greece to the present day. Covering so wide a field the study cannot be detailed, but what the picture loses in detail it gains in boldness of outline.

Most writers have placed too much emphasis, it is pointed out, upon the ethnographic factors which are to be taken into consideration in marking out national limits. Though race should be considered, more important are the preferences of the inhabitants; and often more important than either is the geographical suitability of a frontier, for after all that frontier is best which holds out the promise that the lands it includes will be easily defensible and hence likely to enjoy freedom from successful attack.

The various sorts of frontiers are then reviewed and criticised. In ancient times the frontier was a strip of neutral or no man's land. The establishment of spheres of interest ripened into spheres of influence. These have always tended to become buffer states or protectorates and finally annexed territories.

Sea, mountain and desert frontiers are declared to be best when they can be used. Less desirable are rivers and still less to be sought those irregular boundaries which depend on "war maps," or on a too scrupulous regard for ethnographic characteristics of the population and the lines established by latitude and longitude.

From these points of view, the boundaries of the various sections of the world are then criticised. The lessons of the present war are constantly in the author's mind. The standards he sets would fail to be satisfactory to both sides in the present war in a number of cases, as rules on which peace should be established. Obviously, as the author points out, there are some regions in which no standard is likely to be productive of international quiet. Most strikingly is that the case in the region which is discussed in the concluding chapter—the Balkans.

CHESTER LLOYD JONES.

University of Wisconsin.

MATHEWS, JOHN M. *Principles of American State Administration*. Pp. xiii, 533. Price, \$2.50. New York: D. Appleton and Company, 1917.

This admirable description of the machinery and activity of State administration is the first separate treatment of the subject which has appeared. It sets a high standard for later works in this field. The book is made up of two main parts which describe The Organization of the Administration and the Functions of the Administration respectively. Under Organization there are chapters on the Governor, his powers, the officials of general administration, such as Secretary of State, Attorney-General, etc., the State boards, the civil service. Under Functions the author discusses taxation and finance, education, charities, health, the enforcement of State law, the administration of justice and newer functions.

One of the chief problems in a book dealing with the States is how to avoid a confusing recital of the varying practices of different States. The reader's mind is usually bewildered by the recitation of conflicting details. Dr. Mathews has made a strong and largely successful effort to solve this by selecting a few types of organization and describing these somewhat fully, and by subordinating the variations to footnotes or discarding them altogether. He has used good judgment in his choice of typical systems, usually presenting those which most deserve attention. The author's conclusions as to the modern tendencies in administration are sound and well reasoned. He offers also a goodly number of references for collateral reading and chooses these from works representing different standpoints. The reader is in this way given a broad view of State problems. There is a good concluding chapter on Reorganization.

Dr. Mathews has performed such a distinct service in the preparation of his book, that the reviewer is disposed to offer suggestions only as to a possible change in emphasis or proportion. A single chapter is devoted to Newer Functions of State Administration. These include such important subjects as the supervision of corporations, the administration of labor laws, the promotion of agriculture, etc. To most readers these subjects will be of much greater importance than has been assigned them. In most of the Commonwealths fully 60 per cent of the legislation and administrative activity deals with these subjects. In a later edition of the book, it may be hoped that the author will find room to expand the treatment of these topics, perhaps at the expense of the historical part of his chapters on Taxation and Finance. The book deserves and should find a wide field of usefulness among the colleges and universities.

JAMES T. YOUNG.

University of Pennsylvania.

PHILLIPSON, COLEMAN. *Termination of War and Treaties of Peace*. Pp. xix, 486. Price, \$7.00. New York: E. P. Dutton and Company, 1916.

The author of this book is a London barrister and a well-known writer on international law. The outbreak of the present war appears to have greatly stimulated his productivity for he has lately brought out in rapid succession a treatise entitled *International Law and the Great War*, a new edition of Wheaton's *International Law* and the work here reviewed. It is not known to the reviewer whether the present work was intended to serve those who, it is to be hoped, will

soon be engaged actively in the consideration of the problems with which it deals, but it is evident from a perusal of the book that it contains much juridical and historical information that can be utilized by the peace conference whenever it assembles and even by those whose task it may be to take the preliminary steps to bring about peace negotiations. It is impossible within the compass of a brief review to analyze a work of the scope of this one or to signalize in detail its merits and defects. Briefly stated, the author has undertaken to describe the various methods by which wars may be terminated; to state the legal effects of conquest, subjugation and annexation; to discuss the use of good offices and mediation; to expound the *modus operandi* by which peace negotiations are initiated, armistices concluded, peace conferences assembled, treaties concluded, etc.; and to describe their form, nature, contents, the methods by which the fulfillment of treaty speculations is insured, the effect of cession, etc. The whole procedure by which the transition from a state of war to a state of peace is accomplished is described in the minutest detail even to the proper arrangement of the clauses in the treaty and the order in which the signatures shall be attached. The study is historical, comparative and descriptive.

The steps by which the great European Congresses beginning with that of Westphalia were called into existence and the manner in which their procedure was conducted are reviewed in turn. The negotiations by which the principal wars of the nineteenth century were terminated, the terms of the treaties which followed, when and where they were ratified and other similar matters are all described in an interesting manner. The book is unique in that it represents the first attempt to assemble and analyze a large body of historical information which is most timely now that we are soon, it is hoped, to be the witnesses of the most imposing and far-reaching example of peace negotiations which the world has yet seen. Other books have been written on the treaty-making power and on the making and enforcement of treaties, but Mr. Phillipson's is the first to describe in a comprehensive manner the actual procedure that has been employed in the past in negotiating treaties of peace. As such it throws a flood of light on a problem that must soon confront the diplomats and statesmen of Europe.

In addition to the textual matter the book contains some 120 pages of documents consisting in the main of the texts of the great treaties beginning with that of Paris of 1815 and ending with the Turco-Bulgarian treaty of 1913. There is also a fairly good bibliography, an adequate index and a table of the cases cited throughout the text.

JAMES W. GARNER.

University of Illinois.

VALDÉS C., SALUSTIO. *Pan América y el Problema de la Defensa Naval de Chile.* Pp. 56. Valparaíso: Imprenta de la Armada, 1916.

This is an interesting sketch of the military problems which confront Chile and her neighbors. The author discusses the maintenance of the balance of power between the great States of South America, and urges their coöperation for mutual defense.

D. G. M.

SOCIOLOGY

KELSEY, CARL. *The Physical Basis of Society*. Pp. xvi, 406. Price, \$2.00. New York: D. Appleton and Company, 1916.

In this book Professor Kelsey has not attempted to say anything new but to bring together a mass of knowledge which has never before been assembled between two covers. To lay a proper foundation for the study of society he sets forth what we know as to the relation between man and his physical environment, the control of nature, the evolution of man, heredity, eugenics, race differences, sex differences, the influence of society upon population, social institutions and the nature of progress. From the writings of the specialists on geography, natural history, biology, ethnography and criminal anthropology, he has gleaned, arranged and intelligently interpreted experiments and observations not easily accessible to the student. The style is clear and interesting, the treatment concrete and summary, the attitude objective and the spirit impartial. The author shows open-mindedness and sound judgment, and, in dealing with controverted matters, takes pains to give the evidence on both sides. He proves himself skilful in guiding the reader through a great body of data often ambiguous or conflicting. The book will be welcomed by teachers of sociology who have felt the need of an introductory text leading up to sociology proper. I can imagine no better use of Professor Kelsey's book than putting the class through it during the first part of a course in general sociology.

E. A. R.

LE BON, GUSTAVE. *The Psychology of the Great War*. (Trans. by E. Andrews.) Pp. 480. Price, \$3.00. New York: The Macmillan Company, 1916.

To those who are familiar with the previous writings of the author, the present volume will be something of a disappointment. The keen psychological analysis is present, as in *The Psychology of Revolutions*, but one misses the poise and balanced judgment. It is a splendid example of the influence of war upon even the scholarly mind. The writer is too near the events and too much concerned in the outcome to judge without prejudice. In Books I, V and VII devoted respectively to Psychological Principles Necessary for the Interpretation of the Present War, Psychological Forces Involved in Battles, and Unknown Quantities in Warfare, we find the unbiased analysis of the psychologist, while in Books II, III, IV and VI containing the description of Germany's Evolution in Modern Times, Remote Causes of the War, The Immediate Causes of the War, and Psychological Elements in German Methods of Warfare we find the perfectly natural but partisan reactions of the French nationalist. However much one may sympathize with the feelings of the author, nevertheless in a scientific psychological treatise on the war an analysis of the methods of all the nations involved should certainly be included. In other words, it should not be left to each nation to describe the psychology of the antagonist. It is unfortunate that such a volume as this purports to be, as judged by its title, should not have been deferred until the passions aroused by war had subsided so that a calm and balanced psychological

analysis of the whole conflict, not from the nationalist but from the internationalist point of view, could have been presented.

J. P. L.

MINER, MAUDE E. *Slavery of Prostitution*. Pp. xi, 308. Price, \$1.50. New York: The Macmillan Company, 1916.

Those who have known Maude Miner's work as Secretary of the Probation and Protective Association of New York will be especially interested in this summary of her many years' experience in work for delinquent girls. The book is written from a personal rather than from a scientific point of view and for that reason is valuable as a supplement to the various treatises and reports of vice commissions that have been issued on the subject of prostitution. The author shows that prostitution is not an isolated evil that can be abolished by direct methods of attack. She discusses its relation to housing conditions, industrial maladjustment and lack of recreation facilities, as well as to evil companionship and mental defect. It would have been well if she had also discussed the reverse side of the picture—the effect on the community of a policy of toleration. The distress of the individual woman is perhaps over-emphasized, to the exclusion of the more significant social effects of the evil that has enslaved her. The fact that the book is popular in form, free from sordid details, and gives much space to a program of prevention, makes it especially useful for laymen who are interested in modern methods of prevention and correction of delinquency.

H. G.

INDEX

- Absence: causes, 141-144; cost, 156; records, 148; remedies, 146.
- ABSENCES AND LATENESS, THE REDUCTION OF, IN INDUSTRY. John S. Keir, 140-155.
- Administrative individualism, return to, 170.
- America, popular rule, 176.
- American superiority, aspects, 168.
- Athletics, benefits, 25.
- Benefits, fluctuations, 164.
- Bonus, forms, 150-151.
- system, description, 65-66.
- BOSS, WHO IS, IN YOUR SHOP? Morris Llewellyn Cooke, 167-185.
- Centralized employment, evolution, 1-2.
- CENTRALIZED EMPLOYMENT, ADVANTAGES OF. E. M. Hopkins, 1-9.
- Centralized labor responsibility, meaning, 191.
- CENTRALIZED LABOR RESPONSIBILITY FROM A LABOR UNION STANDPOINT. A. J. Portenar, 191-201.
- CHANDLER, W. L. Conclusions from a Survey of Over Five Hundred Employes' Benefit Associations, 156-166.
- Collective bargaining, field of, 171.
- COLLEGE FACULTIES, CAUSES OF "TURNOVER" AMONG. Hugo Diemer, 216-224.
- Consciousness: level, 212; working, 207.
- COOKE, MORRIS LLEWELLYN. Who is Boss in Your Shop, 167-185.
- Coöperation, qualities needed, 183.
- Democracy, development, 177.
- Detroit plants: accident supervision, 97-102; health supervision, 97-102; home investigation, 98; hospital facilities, 98; medical supervision, 96; mutual aid associations, 104; personal investigation, 96; recreational facilities, 98; restaurants, 98; sanitation, 97.
- DETROIT PLANTS, RECOMMENDED STANDARD PRACTICE ON MEDICAL SUPERVISION IN. Report of a Committee of the Detroit Executives' Club, 96-106.
- DIEMER, HUGO. Causes of "Turnover" Among College Faculties, 216-224.
- Discharges: factors involved in, 7; handling, 198.
- Educational system, development, 177.
- work, reasons for changes, 217-218.
- Efficiency: American, 176; German, 167, 168; improvement, 217; military, 168.
- Emotion: combinations, 212; relation of instinct to, 206-207.
- Employees: associations among, 156; causes of dismissal, 41; classification, 34; cost of hiring, 47; decisions made, 159; dental care, 131-132; development, 221; discharging, 4, 76; discipline, 76-77; education, 132-133; exchange, 12; group insurance for, 156; hiring, 4, 63-64; initiating new, 75-76; insurance for, 130-131; introducing new, 22; lateness among women, 145; living conditions, 38; loans to, 113; medical aid, 127-129; new, 122-123; organization, 195; physical examinations, 98-99; promotion, 136; reasons for laying-off, 42-43; reasons for leaving, 37-38, 117-118; reasons for transfer, 42-43;

- records, 59-63, 75-76, 126-127, 136; recreational activities, 78; rejection, 101; removal from payroll, 119; re-rating, 136; responsibilities, 177; rest periods, 25, 73; results of promoting, 139; rights, 177; self expression, 26-27; serving food to, 129-130; solidarity, 180; study of, 117; suggestions, 187; thrift, 78; training new, 34; transferring, 68, 137; work habits, 26.
- EMPLOYEES, PLANNING PROMOTION FOR, AND ITS EFFECT IN REDUCING LABOR TURNOVER. Philip J. Reilly, 136-139.
- EMPLOYEES, SUGGESTIONS FROM, HELP COMPANY SAVE MONEY. Edwin A. Hunger, 186-190.
- Employees' benefit associations: assessments, 164; boards of directors, 161; bonuses to members, 160; data concerning, 159; disability paid for, 163; expenses, 157; revenue, 163-164; step-down benefits, 163; value of coöperation, 159; voluntary membership, 162; welfare work, 165.
- EMPLOYEES' BENEFIT ASSOCIATIONS, CONCLUSIONS FROM A SURVEY OF OVER FIVE HUNDRED. W. L. Chandler, 156-166.
- Employment: arbiter, 193; evolution of centralized, 1-2; physical examinations, 96; stabilization, 201; steady-ing, 74.
- EMPLOYMENT, ADVANTAGES OF CENTRALIZED. E. M. Hopkins, 1-9.
- Employment bureaus, head, 195.
- department: accomplishments, 64-70; advantages, 12; analysis, 66; beginning, 58-59; benefits, 58; efficiency, 13; establishment, 6, 56-58; function, 6-7; indirect benefits, 69-70; object, 71; operation, 153; personal contact with employees, 77; powers, 8; purposes, 8; reasons for establishing, 55-56; responsibility, 8; use, 51-52; value, 33; work, 57-58, 152-153.
- Employment manager, duties, 57.
- problems, solution, 56.
- Energy: problem, 203; surplus, 203.
- Environment, effect, 209.
- ERSKINE, LILLIAN. The Standardization of Working Essentials, 82-95.
- European War, effect, 167.
- Evolution, results, 204.
- Executives, importance, 6.
- Factories: dressing room facilities, 94; drinking water, 95; dust removal, 86-88; fume removal, 90-91; lighting, 91-92; lunch rooms, 94-95, 114-116; sanitary arrangements, 102-106; savings bureau, 112-113; toilet facilities, 95; ventilation, 83-86; washing facilities, 93-94.
- Factory nurse: daily routine, 109-111; duties, 105; equipment of department, 111-112; qualifications, 107; results of work, 72; schedule of work, 108-109; work, 72.
- FACTORY NURSE, THE WORK AND SERVICE OF THE, IN MANUFACTURING PLANTS. Nathalie C. Rudd, 107-116.
- FISH, E. H. The Tabulating of Labor Turnover, 33-43.
- FISHER, BOYD. Determining the Cost of Turnover of Labor, 44-50.
- FISHER, BOYD. How to Reduce Labor Turnover, 10-32.
- Foundries, ventilation, 85.
- Government, efficiency, 167.
- Group insurance: for employees, 156; value, 157.
- HOPKINS, E. M. Advantages of Centralized Employment, 1-9.
- Human labor, purchase, 194.
- HUNGER, EDWIN A. Suggestions from Employees Help Company Save Money, 186-190.
- Hygiene, essentials, 93.

- Illumination, standardization, 91.
 Impulses: censor, 209; definition, 205.
 Industrial absent: cost, 140; meaning, 140.
 — accidents, 143.
 — democracy: establishment, 199; movement for, 169-170; working out, 171-172.
 — efficiency, handicaps, 82-83.
 — tendencies, recent, 170.
 — world, readjustments, 174.
 Industry: administration, 6; autocratic control, 172; commission regulation, 178-179; effect of war on, 3; efficiency, 167; functionalized organization, 5; human cost, 71; human relations, 3, 199; safety first in, 153; science of, 173.
 INDUSTRY, THE REDUCTION OF ABSENCES AND LATENESS IN. John S. Keir, 140-155.
 Inhibition, mechanism, 214.
 Instinct: definition, 205; relation of emotion to, 206-207.
 Instruction staff, development, 221-222.
 Instructors: activities, 218-219; efficiency, 223; itemized cost of turnover, 216-217; retention, 222-223; salaries, 222-223; selecting, 218-221; sources of supply, 218.
 Insurance: for employes, 130-131; selling, 159.
 Jobs, analysis, 74.
 Joseph and Feiss Company, absences, 145.
 KEIR, JOHN S. The Reduction of Absences and Lateness in Industry, 140-155.
 Labor: mobility, 14; productive, 6; responsibility, 181; stabilizing, 156-157; subdivision, 28.
 LABOR, DETERMINING THE COST OF TURNOVER OF. Boyd Fisher, 44-50.
 Labor bureaus, union attitude toward, 194-196.
 — leader, existence, 197.
 — movement, organized, 169.
 — supply: handling, 192; maintenance, 2; nature, 73-74; source, 73-74.
 — turnover: among women, 144; analyzing, 18, 117; attitude of unions toward reduction, 198-200; causes, 191-194; cost, 10-12, 33, 52-54, 216; cost system, 17, 44; department summary, 35; effect, 16; fundamental remedies, 30-31; handling, 196-198; influence of centralization, 201; meaning, 45; plans for reducing, 14-15; plant summary, 39; preliminary measures of reducing, 29-30; problem, 80-81; provocative remedies, 32; record, 33, 36, 40; record system, 17-18; reduction, 12-14, 29-32, 117, 196; relation between inefficiency, vice and, 15-16; remedies for, 16-18; responsibilities of reducing, 27; supplementary remedies, 31-32; unregulated, 83; variables in cost, 45-47.
 LABOR TURNOVER, AN ACTUAL ACCOUNT OF WHAT WE HAVE DONE TO REDUCE OUR. John M. Williams, 51-70.
 LABOR TURNOVER, HOW TO REDUCE. Boyd Fisher, 10-32.
 LABOR TURNOVER, PLANNING PROMOTION FOR EMPLOYEES AND ITS EFFECT IN REDUCING. Philip J. Reilly, 136-139.
 LABOR TURNOVER, THE REDUCTION OF, IN THE PLIMPTON PRESS. Mrs. Jane C. Williams, 71-81.
 LABOR TURNOVER, THE TABULATING OF. E. H. Fish, 33-43.
 LABOR UNION STANDPOINT, CENTRALIZED LABOR RESPONSIBILITY FROM A. A. J. Portenar, 191-201.

- Labor unions: absence, 179-180; attitude, 171-172; cooperating with, 179-181.
- Lateness: causes, 141-142; docking, 147; habit, 142; records, 148.
- LATENESS, THE REDUCTION OF ABSENCES AND, IN INDUSTRY. John S. Keir, 140-155.
- Leadership: individuality, 185; industrial, 184; qualities needed, 183; responsibilities, 181-182.
- Life, mechanical control, 212.
- Lighting, natural, 92.
- Management: functionalized, 176-177.
- MANUFACTURING PLANTS, THE WORK AND SERVICE OF THE FACTORY NURSE IN. Nathalie C. Rudd, 107-116.
- MEDICAL AUDIT, PERSONNEL AND. F. E. Weakly, 117-135.
- MEDICAL SUPERVISION, RECOMMENDED STANDARD PRACTICE ON, IN DETROIT PLANTS. Report of a Committee of the Detroit Executives' Club, 96-106.
- Mental traits, origin, 202.
- Mind, elements, 213.
- MIND, THE MECHANISM OF. Simon N. Patten, 202-215.
- Municipal government, weakness, 140.
- Packard Motor Car Company, physical equipment, 11.
- PATTEN, SIMON N. The Mechanism of Mind, 202-215.
- PERSONNEL AND MEDICAL AUDIT. F. E. Weakly, 117-135.
- Personnel audit, value, 123.
- Physical examination, blanks, 101.
- Plimpton Press: methods of payment, 80; mutual benefit association, 79-80; savings bureau, 78-79; work, 71.
- PLIMPTON PRESS, THE REDUCTION OF LABOR TURNOVER IN THE. Mrs. Jane C. Williams, 71-81.
- Political democracy, working out, 171.
- tendencies, recent, 170.
- PORTENAR, A. J. Centralized Labor Responsibility from a Labor Union Standpoint, 191-201.
- Positions, application for, 60.
- Production: excess plant cost of reduced, 49; increased, 172; labor cost of reduced, 48; maximum, 172; meaning, 173; seasonal, 193.
- Publicity, power, 150.
- REILLY, PHILIP J. Planning Promotion for Employes and its Effect in Reducing Labor Turnover, 136-139.
- RUDD, NATHALIE C. The Work and Service of the Factory Nurse in Manufacturing Plants, 107-116.
- Salary, raises, 145.
- Saxon Motor Car Company, labor turnover, 12.
- Science: developments, 176; discoveries, 176.
- Scientific management: definition, 170; development, 2; efficiency, 181; introduction, 71; principles, 220.
- Seasonal demand, problems, 72-73.
- SHOP, WHO IS BOSS IN YOUR? Morris Llewellyn Cooke, 167-185.
- Shop conditions: reforms, 66-67; remedies, 67.
- STANDARDIZATION OF WORKING ESSENTIALS, THE. Lillian Erskine, 82-95.
- Suggestion system, advertising, 188.
- Suggestions: adopted, 189; awards for, 190; division, 188; of foremen, 188; organization handling, 189.
- Thought activity, elements, 213.
- Thrift Club, organization, 165.
- "TURNOVER," CAUSES OF, AMONG COLLEGE FACULTIES. Hugo Diemer, 216-224.
- United States, industrial progress, 3.
- Ventilating systems, construction, 88-90.
- Vocational bureau, purpose, 122.

- Wage loss, total, 140.
 — payment, type, 145.
 Wages, fixing, 21.
 Ward, Montgomery and Company:
 medical division, 128; welfare work,
 133-135.
 WEAKLY, F. E. Personnel and Medical
 Audit, 117-135.
 Welfare work, development, 115.
 WILLIAMS, MRS. JANE C. The Re-
 duction of Labor Turnover in the
 Plimpton Press, 71-81.
 WILLIAMS, JOHN M. An Actual
 Account of what we have done to
 Reduce our Labor Turnover, 51-70.
 Work, analysis, 124-125.
 Work, hours: short, 24-25, 66.
 Worker: analyzing, 124; discontent,
 145; physical needs, 82.
 Working conditions, influence, 37-
 38.
 WORKING ESSENTIALS, THE STAN-
 DARDIZATION OF. Lillian Erskine,
 82-95.
 Workmen: advancement, 19-20; hiring
 18-19; industrial education, 19-20;
 pass issued to, 62; physical efficiency,
 23-24; providing for future, 28;
 quitting, 67-68; wages, 19-21; spec-
 ifications for hiring, 63-64.
 Workmen's compensation act, purpose,
 127-128.



Supplement to

The Annals

THE AMERICAN ACADEMY OF POLITICAL
AND SOCIAL SCIENCE

May, 1917

The Mexican Constitution of 1917

Compared with

The Constitution of 1857

PHILADELPHIA

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THE MEXICAN CONSTITUTION OF 1917
COMPARED WITH
THE CONSTITUTION OF 1857

TRANSLATED AND ARRANGED
BY
H. N. BRANCH, LL.B.

WITH A FOREWORD
BY
L. S. ROWE, Ph.D., LL.D.



PHILADELPHIA
THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE
1917

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FOREWORD

The widespread interest in Mexican affairs has led the Editorial Council of the Academy to arrange for the early publication of the Mexican Constitution adopted at the recent Constitutional Convention held in Queretaro. In a sense this publication supplements the special volume issued by the Academy in January last on "The Purposes and Ideals of the Mexican Revolution."

Since the first movement for independence from the mother country in 1810, Mexico has passed through an extraordinary constitutional development. The idea of a Republican form of government made its way but slowly amongst the founders of Mexican independence. Between 1810 and 1824 the opinion of the country wavered between a constitutional monarchy and a republic. It is true that the earliest Mexican Constitution—that adopted in Apatzingan by the first Constitutional Convention—provided for a republican form of government with an Executive composed of three persons elected by the National Congress. Amongst the members of this triumvirate, a system of rotation in office was established under which each exercised the powers of Chief Executive during a consecutive period of four months.

This Constitution was regarded as provisional. As soon as the struggle for independence was over, the leaders planned to call another convention for the purposes of effecting the final organization of the country. During the period between 1815 and 1857, the country was torn by internal strife and almost every conceivable form of Constitutional systems was tried, ranging from a republican triumvirate to the imperial system of Iturbide.

The development of Federalism in Mexico stands in marked contrast with the political evolution of the United States. In Mexico, federalism meant the sub-division of what had been, under Spanish rule, a centralized, unified system; in the United States, the establishment of a federal system signified a closer union between separated political units. In spite of the adoption of a federal system by Mexico in 1857, the highly centralized traditions of Spanish rule perpetuated themselves and finally resulted, under

the Diaz administration, in the complete subordination of the individual states to the national government.

The leaders of the revolutionary movement against the Diaz régime were convinced that the Constitution of 1857 had been used by self-seeking politicians for personal ends and that its provisions had contributed toward the domination of the country by a self constituted oligarchy. It is not surprising, therefore, to find radical changes in the Constitution of 1917. The revolutionary leaders, headed by Venustiano Carranza, hold that the avowed purposes of the revolutionary movement, namely to secure for the masses of the Mexican people better economic and social conditions, must be incorporated into the organic law and it is their hope that thereby the country will be protected against a possible reactionary movement. To what extent these hopes will be realized, the future alone can determine.

The Academy is under obligation to Mr. H. N. Branch for his admirable translation of the Constitution of 1917. His painstaking effort has also made it possible for the Academy to place before its members the illuminating comparison between the Constitutions of 1857 and 1917.

L. S. ROWE.

University of Pennsylvania.

May, 1917.

PREFACE

In this translation, the effort has been made to use terms familiar to the English-speaking world, *e.g.*, "House of Representatives," "Attorney General," "impeachment," etc., even though such phrases do not always connote precisely the same thing in the Mexican constitutional system as in that of the United States. Any attempt to coin new and strained English terms would be confusing.

The substantial innovations introduced into the 1917 text are shown in italics, while the important omissions from the 1857 text are set in black face type.

Acknowledgment is made to José Ignacio Rodríguez, ex-Chief Translator and Librarian of the Pan American Union, for his rendering of the 1857 constitution, from which the present version of this document was largely drawn.

H. N. BRANCH.

The Sorrento, Washington, D. C.
March, 1917

The first of these is the fact that the...

The second is the fact that the...

The third is the fact that the...

The fourth is the fact that the...

The fifth is the fact that the...

The sixth is the fact that the...

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The fifteenth is the fact that the...

The sixteenth is the fact that the...

MEXICAN CONSTITUTION OF 1917 COMPARED WITH CONSTITUTION OF 1857

CONSTITUTION OF 1857

PREAMBLE

In the name of God and by the authority of the Mexican people.

The representatives of the different States, of the District and of the Territories which compose the Republic of Mexico, called upon by the provisions of the Plan proclaimed in Ayutla the first of March, eighteen hundred and fifty-four, amended in Acapulco the eleventh day of the same month and year, and by the call issued the seventeenth of October, eighteen hundred and fifty-five, to convene for the purpose of framing a constitution for the nation and making it a popular representative, democratic republic, exercising the powers with which they are vested, do hereby comply with the requirements of their high office, by decreeing the following political Constitution of the Mexican Republic, on the indestructible basis of its legitimate independence, proclaimed the sixteenth of September, eighteen hundred and ten, and consummated the twenty-seventh of September, eighteen hundred and twenty-one.

CONSTITUTION OF 1917

1857

TITLE I

SECTION I

Of the Rights of Man

Article 1. The Mexican people recognize that the rights of man are the basis and the object of social institutions. Consequently they declare that all the laws and all the authorities of the country must respect and maintain the guarantees which the present constitution grants.

Art. 2. In the Republic all are born free. Slaves who set foot upon the national territory shall recover, by this act alone, their freedom, and enjoy the protection of the law.

Art. 3. Instruction is free. The law shall determine what professions shall require licenses for their exercise, and what requisites are necessary to obtain said licenses.

Art. 4. Every one is free to engage in any honorable and useful profession, industrial pursuit, or occupation suitable to him, and to avail himself of its products. The exercise of this liberty shall not be hindered except by judicial sentence when

1917

TITLE I

CHAPTER I

Of Personal Guarantees

Article 1. Every person in the United States of Mexico shall enjoy all guarantees granted by this Constitution; these shall neither be abridged nor suspended except in such cases and under such conditions as are herein provided.¹

Art. 2. Slavery is forbidden in the United States of Mexico. Slaves who enter the national territory shall, by this act alone, recover their freedom, and enjoy the protection of the law.

Art. 3. Instruction is free; that given in public institutions of learning shall be secular. Primary instruction, whether higher or lower, given in private institutions shall likewise be secular.

No religious corporation nor minister of any religious creed shall establish or direct schools of primary instruction.

Private primary schools may be established only subject to official supervision.

Primary instruction in public institutions shall be gratuitous.

Art. 4. No person shall be prevented from engaging in any profession, industrial or commercial pursuit or occupation of his liking, provided it be lawful. The exercise of this liberty shall only be forbidden by judicial

¹ See Art. 29.

1857

such exercise infringes the rights of a third party, or by executive order, issued in the manner specified by law, when it offends the rights of society.

Art. 5. No one shall be compelled to render personal services without due compensation and without his full consent, excepting labor imposed as a penalty by judicial decree.

Subject to the conditions set forth in the respective laws, only military service shall be obligatory; and municipal service, service in connection with elections, and jury service shall be obligatory and without compensation.

The State shall not permit any contract, covenant, or agreement to be carried out having for its object the abridgment, loss or irrevocable sacrifice of the liberty of man, whether by reason of labor, education or religious vows.

The law, therefore, does not recognize, nor consent to the establishment of, monastic orders, of whatever denomination or for whatever purpose contemplated. Nor shall any person legally agree to his own proscription or exile. [*As amended, June 10, 1898.*]

1917

order when the rights of third persons are infringed, or by executive order, issued under the conditions prescribed by law, when the rights of society are violated. No one shall be deprived of the fruit of his labor except by judicial decree.

Each State shall determine by law what professions shall require licenses, the requisites to be complied with in obtaining the same, and the authorities empowered to issue them.

Art. 5. No one shall be compelled to render personal services without due compensation and without his full consent, excepting labor imposed as a penalty by judicial decree; *which shall conform to the provisions of clauses I and II of Article 123.*

Only the following public services shall be obligatory, subject to the conditions set forth in the respective laws: military service, jury service, service in municipal and other public elective office, *whether this election be direct or indirect*, and service in connection with elections, which shall be obligatory and without compensation.

The State shall not permit any contract, covenant or agreement to be carried out having for its object the abridgment, loss or irrevocable sacrifice of the liberty of man, whether by reason of labor, education or religious vows. The law, therefore, does not permit the establishment of monastic orders, of whatever denomination, or for whatever purpose contemplated.

1857

Art. 6. The expression of ideas shall not be the subject of any judicial or executive investigation, unless it offend good morals, impair the rights of third parties, incite to crime or cause a breach of the peace.

Art. 7. Freedom of writing and publishing writings on any subject is inviolable. No law or authority shall have the right to establish censorship, require bond from authors or printers, nor restrict the liberty of the press, which shall be limited only by the respect due to private life, morals, and public peace. Cases of offenses committed through the public press shall be tried by the competent courts of the Union, the States, the

1917

Nor shall any person legally agree to his own proscription or exile, or to the temporary or permanent renunciation of the exercise of any profession or industrial or commercial pursuit.

A contract for labor shall only be binding to render the services agreed upon for the time fixed by law and shall not exceed one year to the prejudice of the party rendering the service; nor shall it in any case whatsoever embrace the waiver, loss or abridgment of any political or civil right.

In the event of a breach of such contract on the part of the party pledging himself to render the service, the said party shall only be liable civilly for damages arising from such breach, and in no event shall coercion against his person be employed.

Art. 6. [Identical]

Art. 7. Freedom of writing and publishing writings on any subject is inviolable. No law or authority shall have the right to establish censorship, require bond from authors or printers, nor restrict the liberty of the press, which shall be limited only by the respect due to private life, morals and public peace. *Under no circumstances shall a printing press be sequestered as the corpus delicti.*

The organic laws shall pre-

1857

Federal District or the Territory of Lower California, according to penal law. [*As amended, May 15, 1883.*]

Art. 8. The right of petition, exercised in writing in a peaceful and respectful manner, is inviolable; but in political matters only citizens of the Republic may exercise it. To every petition an answer shall be given in writing, in the form of a decision, by the official to whom it may have been addressed, and the said official shall be bound to make the petitioner acquainted with the result.

Art. 9. No one shall be deprived of the right peaceably to assemble or to come together for any lawful purpose; but only citizens² shall be permitted to exercise this right for the purpose of taking part in the political affairs of the country. No armed assembly shall have the right to deliberate.

² See Arts. 34 and 35 for definition and prerogatives of citizenship.

1917

scribe whatever provisions may be necessary to prevent the imprisonment, under pretext of a denunciation of offenses of the press, of the vendors, newsboys, workmen and other employees of the establishment publishing the writing denounced, unless their responsibility be previously established.

Art. 8. Public officials and employees shall respect the exercise of the right of petition, provided it be in writing and in a peaceful and respectful manner; but this right may be exercised in political matters solely by citizens.

To every petition there shall be given an answer in writing by the official to whom it may be addressed, and the said official shall be bound to inform the petitioner of the decision taken *within a brief period.*

Art. 9. The right peaceably to assemble or to come together for any lawful purpose shall not be abridged; but only citizens shall be permitted to exercise this right for the purpose of taking part in the political affairs of the country. No armed assembly shall have the right to deliberate.

No meeting or assembly shall be deemed unlawful, nor may it be dissolved, which shall have for its purpose the petitioning of any authority or the presentation of any protest against any act, provided no insults be proffered against the said authority, nor violence resorted to, nor threats used to intimidate or to compel

1857

Art. 10. Every one has the right to possess and carry arms for his safety and legitimate defense. The law shall designate what arms are prohibited, and the punishment to be incurred by those who carry them.

Art. 11. Every one has the right to enter and leave the Republic, to travel through its territory and change his residence without necessity of a letter of security, passport, safe conduct or any other similar requirement. The exercise of this right shall be subordinated to the powers of the judiciary, in the event of civil or criminal responsibility, and to those of the executive, in so far as relates to the limitations imposed by law in regard to emigration, immigration, and the public health of the country. [*As amended, November 12, 1908.*]

Art. 12. No titles of nobility, or prerogatives, or hereditary honors exist in the Republic nor shall they be recognized therein. Only the people, legally represented, may decree recompenses in honor of those who have rendered or may render eminent services to the country or to humanity.

1917

the said authority to render a favorable decision.

Art. 10. The inhabitants of the United States of Mexico are entitled to have arms of any kind in their possession for their protection and legitimate defense, excepting such as are expressly prohibited by law and such as the nation may reserve for the exclusive use of the army, navy and national guard; but they shall not bear such arms within inhabited places, except subject to the police regulations thereof.

Art. 11. Every one has the right to enter and leave the Republic, to travel through its territory and change his residence without necessity of a letter of security, passport, safe conduct or any other similar requirement. The exercise of this right shall be subordinated to the powers of the judiciary, in the event of civil or criminal responsibility, and to those of the executive, in so far as relates to the limitations imposed by law in regard to emigration, immigration, and the public health of the country, or in regard to undesirable foreigners resident in the country.

Art. 12. No titles of nobility, prerogatives or hereditary honors shall be granted in the United States of Mexico, nor shall any effect be given to those granted by other countries.

1857

Art. 13. In the Mexican Republic no one shall be tried according to private laws or by special tribunals. No person or corporation shall have privileges nor enjoy emoluments which are not in compensation for a public service and established by law. Military jurisdiction shall be recognized only for the trial of criminal cases having direct connection with military discipline. The law shall clearly define the cases included in this exception.

Art. 14. No retroactive law shall be enacted. No person shall be tried or sentenced except under laws previously enacted, exactly applicable to the case, and by a tribunal previously established by law.

Art. 15. No treaty shall ever be made for the extradition of

1917

Art. 13. No one shall be tried according to private laws or by special tribunals. No person or corporation shall have privileges nor enjoy emoluments which are not in compensation for public services and established by law. Military jurisdiction shall be recognized for the trial of criminal cases having direct connection with military discipline, *but the military tribunals shall in no case and for no reason extend their jurisdiction over persons not belonging to the army. Whenever a civilian shall be implicated in any military crime or offense, the cause shall be heard by the corresponding civil authorities.*

Art. 14. No law shall be given retroactive effect to the prejudice of any person whatsoever.

No person shall be deprived of life, liberty, property, possessions or rights without due process of law instituted before a duly created court, in which the essential elements of procedure are observed and in accordance with previously existing laws.

In criminal cases no penalty shall be imposed by mere analogy or even by a priori evidence, but the penalty shall be decreed by a law in every respect applicable to the crime in question.

In civil suits the final judgment shall be according to the letter or the juridical interpretation of the law; in the absence of the latter, the general legal principles shall govern.

Art. 15. No treaty shall be authorized for the extradition

1857

political offenders, or of offenders of the common class, who have been slaves in the country where the offense was committed; nor shall any agreement or treaty be entered into which abridges or modifies the guarantees and rights which this constitution grants to the individual and to the citizen.

Art. 16. No one shall be molested in his person, family, domicile, papers or possessions, except by virtue of an order in writing of the competent authority, setting forth the legal grounds upon which the measure is taken. In cases in *flagrante delicto* any person may apprehend the offender and his accomplices, placing them without delay at the disposal of the nearest authorities.

1917

of political offenders, or of offenders of the common class, who have been slaves in the country where the offense was committed. Nor shall any agreement or treaty be entered into which abridges or modifies the guarantees and rights which this constitution grants to the individual and to the citizen.

Art. 16. No one shall be molested in his person, family, domicile, papers or possessions, except by virtue of an order in writing of the competent authority setting forth the legal ground and justification for the action taken. *No order of arrest or detention shall be issued against any person other than by competent judicial authority, nor unless preceded by a charge, accusation or complaint for a specific offense punishable by imprisonment, supported by an affidavit of a credible party or by such other evidence as shall make the guilt of the accused probable; in cases in flagrante delicto any person may arrest the offender and his accomplices, placing them without delay at the disposition of the nearest authorities. Only in urgent cases instituted by the public attorney without previous complaint or indictment¹ and when there is no judicial authority available may the administrative authorities, on their strictest accountability, order the detention of the accused, placing him at the disposition of the judicial authorities. Every search warrant, which may only be issued by the ju-*

¹ See note to Art. 21, p. 114.

1857

Art. 17. No one shall be imprisoned for debts of a purely civil character. No one shall resort to violence in the enforcement of his rights. The tribunals shall always be open for the administration of justice, which shall be gratuitous, judicial costs being consequently abolished.

Art. 18. Imprisonment shall take place only for crimes deserving corporal punishment. In any stage of the case in which it shall appear that such a punishment can not be imposed upon the accused, he shall be set at

1917

judicial authority and which must be in writing, shall specify the place to be searched, the person or persons to be arrested and the objects sought, to which the proceeding shall be strictly limited; at the conclusion of which, a detailed written statement shall be drawn up in the presence of two witnesses proposed by the occupant of the place to be searched, or, in his absence or refusal, by the official making the search.

Administrative officials may enter private houses solely for the purpose of determining that the sanitary and police regulations have been complied with; they may likewise demand the exhibition of books and documents necessary to prove that the fiscal regulations have been obeyed, subject to the respective laws and to the formalities prescribed for cases of search.

Art. 17. No one shall be imprisoned for debts of a purely civil character. No one shall take the law into his own hands, nor resort to violence in the enforcement of his rights. The courts shall be open for the administration of justice at such times and under such conditions as the law may establish; their services shall be gratuitous and all judicial costs are accordingly prohibited.

Art. 18. Detention shall be exercised only for offenses meriting corporal punishment. The place of detention shall be different and completely separated from that set apart for the serving of sentences.

The Federal and State Govern-

1857

liberty on bail.⁴ In no case shall the imprisonment or detention be prolonged for failure to pay fees, or any other pecuniary charge.⁵

Art. 19. No detention shall exceed three days, unless justified by a warrant, issued in accordance with law, and giving the grounds for the imprisonment. The mere lapse of this time shall render the authority that orders or consents to it and the agents, ministers, wardens, or jailers who execute it, responsible therefor. Any maltreatment during apprehension or confinement; any molestation inflicted without legal justification; or any exaction or contribution levied in prison, is an abuse which the laws must correct and the authorities severely punish.

1917

ments shall organize in their respective territories the penal system—penal colonies or prisons—on the basis of labor as a means of regeneration.⁶

Art. 19. No detention shall exceed three days except for reasons specified in the formal order of commitment, which shall set forth the offense charged, the substance thereof, the time, place and circumstances of its commission, and the facts disclosed in the preliminary examination; these facts must always be sufficient to establish the *corpus delicti* and the probable guilt of the accused. All authorities ordering any detention or consenting thereto, as well as all agents, subordinates, wardens or jailers executing the same, shall be liable for any breach of this provision.

The trial shall take place only for the offense or offenses set forth in the formal order of commitment. If it shall develop in the course of trial that another offense different from that charged has been committed, a separate accusation must be brought. This, however, shall not prevent the joinder of both causes of action, if deemed advisable.

Any maltreatment during apprehension or confinement; any molestation inflicted without legal justification; any exaction or contribution levied in prison are abuses which the law shall correct and the authorities repress.

⁴ Compare Sec. I, Art. 20, of 1917.

⁵ Substantially identical with Sec. X, Art. 20, of 1917.

⁶ See Art. 5 and Clauses I and II of Art. 123 of 1917.

1857

Art. 20. In every criminal trial the accused shall enjoy the following guarantees:

I. The grounds of the proceedings and the name of the accuser, if there be such, shall be made known to him.

II. His preliminary examination shall be made within forty-eight hours, to be counted from the time he is placed at the disposition of the judge.

III. He shall be confronted with the witnesses who testify against him.

IV. He shall be furnished with all information of record, which he may need for his defense.

V. He shall be heard in his defense, either personally or by counsel, or by both, as he may desire. In case he shall have no one to defend him, a list of public counsel shall be shown to him, in order that he may choose one or more to act as his counsel.

1917

Art. 20. In every criminal trial the accused shall enjoy the following guarantees:

I. *He shall be set at liberty on demand and upon giving a bond up to ten thousand pesos, according to his status and the gravity of the offense charged, provided, however, that the said offense shall not be punishable with more than five years' imprisonment; he shall be set at liberty without any further requisite than the placing of the stipulated sum at the disposal of the proper authorities or the giving of an adequate mortgage bond or personal security.*⁷

II. *He may not be forced to be a witness against himself; wherefore denial of access or other means looking towards this end is hereby strictly prohibited.*

III. He shall be publicly notified within forty-eight hours after being turned over to the judicial authorities of the name of his accuser and of the nature of and cause for the accusation, so that he may be familiar with the offense with which he is charged, may reply thereto and make his preliminary statement.

IV. He shall be confronted with the witnesses against him, who shall testify in his presence if they are to be found in the place where the trial is being held, so that he may cross-examine them in his defense.

V. All witnesses which he shall offer shall be heard in his defense, as well as all evidence received, for which he shall be given such time as the law may prescribe;

⁷ See note to Art. 18 of 1857.

1857

1917

he shall furthermore be assisted in securing the presence of any person or persons whose testimony he may request, provided they are to be found at the place of trial.

VI. He shall be entitled to a public trial by a judge or jury of citizens who can read and write and are also citizens of the place and district where the offense shall have been committed, provided the penalty for such offense be greater than one year's imprisonment. The accused shall always be entitled to trial by jury for all offenses committed by means of the press against the public peace or against the safety, domestic or foreign, of the Republic.

VII. He shall be furnished with all information of record needed for his defense.

VIII. He shall be tried within four months, if charged with an offense the maximum penalty for which does not exceed two years' imprisonment, and within one year, if the maximum penalty be greater.

IX. He shall be heard in his own defense, either personally or by counsel, or by both, as he may desire. In case he shall have no one to defend him, a list of official counsel shall be submitted to him in order that he may choose one or more to act in his defense. If the accused shall not desire to name any counsel for his defense, after having been called upon to do so at the time of his preliminary examination, the court shall appoint counsel to defend him. The accused may name his counsel immediately on arrest and shall

1857

1917

Art. 21. The imposition of penalties properly so called pertains exclusively to the judiciary. The political or executive authorities shall only have power to impose fines and imprisonment, as disciplinary measures, the former of no more than five hundred dollars, and the latter for no more than one month, in the cases and in the manner which the law shall expressly determine.

Art. 22. Punishments by mutilation and infamy, by branding, flogging, beating with sticks,

be entitled to have him present at every stage of the trial; but he shall be bound to make him appear as often as required by the court.

X. In no event may imprisonment or detention be extended through failure to pay counsel fees or through any other pecuniary charge, by virtue of any civil liability or other similar cause.* Nor shall detention be extended beyond the time set by law as the maximum for the offense charged.

The period of detention shall be reckoned as a part of the final sentence.

Art. 21. The imposition of all penalties is an exclusive attribute of the judiciary. The prosecution of offenses belongs to the public prosecutor and to the judicial police, who shall be under the immediate command and authority of the public prosecutor. The punishment of violations of municipal and police regulations belongs to the administrative authorities, and shall consist only of a fine or of imprisonment not exceeding thirty-six hours. Should the offender fail to pay the fine this shall be substituted by the corresponding period of arrest, which shall in no case exceed fifteen days.

Should the offender be a workman or unskilled laborer, he shall not be punished with a fine greater than the amount of his weekly wage or salary.

Art. 22. Punishments by mutilation and infamy, by branding,

* See note to Art. 18 of 1857.

1857

torture of whatever kind, excessive fines, confiscation of property, or any other penalties, unusual or working corruption of the blood, shall be forever prohibited.

Art. 23. Capital punishment is abolished for political offenses; in the case of offenses other than political it shall only be imposed for high treason committed during a foreign war; parricide, murder with malice aforethought, arson, highway robbery, piracy, and grave military offenses. [*As amended, May 14, 1901.*]

Art. 24. No criminal case shall have more than three instances. No person, whether acquitted or convicted, shall be

1917

flogging, beating with sticks, torture of any kind, excessive fines, confiscation of property and any other penalties, unusual or working corruption of the blood, are prohibited.

Attachment proceedings of the whole or part of the property of any person made under judicial authority to cover any civil liability arising out of the commission of any offense, or by reason of the imposition of any tax or fine, shall not be deemed a confiscation of property.

Capital punishment is likewise forbidden for all political offenses; in the case of offenses other than political it shall only be imposed for high treason committed during a foreign war, parricide, murder with malice aforethought, arson, abduction, highway robbery, piracy, and grave military offenses.

Art. 23. [Identical]

1857

tried again for the same offense. The practice of discharging in one instance is abolished.

Art. 25. Sealed correspondence sent through the mails shall be free from search. The violation of this guarantee is an offense which the law will punish severely.

Art. 26. In time of peace no soldier may demand quarters, supplies, or other real or personal service, without the consent of the owner. In time of war he may do so, but only in the manner prescribed by law.

Art. 27. Private property shall not be taken without the consent of the owner, except for reasons of public utility, indemnification having been made. The law shall determine the authority to make the expropriation and the conditions on which it shall be carried out.

No religious corporations and institutions of whatever char-

1917

Art. 24. Every one is free to embrace the religion of his choice and to practice all ceremonies, devotions or observances of his respective creed, either in places of public worship or at home, provided they do not constitute an offense punishable by law.

Every religious act of public worship shall be performed strictly within the places of public worship, which shall be at all times under governmental supervision.*

Art. 25. Sealed correspondence sent through the mails shall be free from search, and its violation shall be punishable by law.

Art. 26. No member of the army shall in time of peace be quartered in private dwellings, without the consent of the owner; nor shall he demand any other exaction. In time of war the military may demand lodging, equipment, provisions and other assistance, in the manner provided by the corresponding martial law.

Art. 27. The ownership of lands and waters comprised within the limits of the national territory is vested originally in the Nation, which has had, and has, the right to transmit title thereof to private persons, thereby constituting private property.

* Drawn largely from "Leyes de Reforma" of December 14, 1874. See note to Art. 130, p. 116.

1857

acter, denomination, duration or object, nor civil corporations, when under the patronage, direction or administration of the former, or of ministers of any creed shall have legal capacity to acquire title to, or administer, real property, other than the buildings immediately and directly destined to the services or purposes of the said corporations and institutions. Nor shall they have legal capacity to acquire or administer loans made on such real property.

Civil corporations and institutions not comprised within the above provision, may acquire and administer, in addition to the buildings mentioned, real property and loans made on such real property required for their maintenance and purposes, subject to the requisites and limitations to be established by the Federal law to be enacted by the Congress on the subject. [As amended, May 14, 1901.]

1917

Private property shall not be *expropriated* except for reasons of public utility and by means of indemnification.

The Nation shall have at all times the right to impose on private property such limitations as the public interest may demand as well as the right to regulate the development of natural resources, which are susceptible of appropriation, in order to conserve them and equitably to distribute the public wealth. For this purpose necessary measures shall be taken to divide large landed estates; to develop small landed holdings; to establish new centers of rural population with such lands and waters as may be indispensable to them; to encourage agriculture and to prevent the destruction of natural resources, and to protect property from damage detrimental to society. Settlements, hamlets situated on private property and communes which lack lands or water or do not possess them in sufficient quantities for their needs shall have the right to be provided with them from the adjoining properties, always having due regard for small landed holdings. Wherefore, all grants of lands made up to the present time under the decree of January 6, 1915, are confirmed.

1857

1917

Private property acquired for the said purposes shall be considered as taken for public utility.

In the Nation is vested direct ownership of all minerals or substances which in veins, layers, masses, or beds constitute deposits whose nature is different from the components of the land, such as minerals from which metals and metaloids used for industrial purposes are extracted; beds of precious stones, rock salt and salt lakes formed directly by marine waters, products derived from the decomposition of rocks, when their exploitation requires underground work; phosphates which may be used for fertilizers; solid mineral fuels; petroleum and all hydrocarbons—solid, liquid or gaseous.

In the Nation is likewise vested the ownership of the waters of territorial seas to the extent and in the terms fixed by the law of nations; those of lakes and inlets of bays; those of interior lakes of natural formation which are directly connected with flowing waters; those of principal rivers or tributaries from the points at which there is a permanent current of water in their beds to their mouths, whether they flow to the sea or cross two or more States; those of intermittent streams which traverse two or more States in their main body; the waters of rivers, streams, or ravines, when they bound the national territory or that of the States; waters extracted from mines; and the beds and banks of the lakes and streams hereinbefore mentioned, to the extent fixed by law. Any other stream of water not comprised

1857

1917

within the foregoing enumeration shall be considered as an integral part of the private property through which it flows; but the development of the waters when they pass from one landed property to another shall be considered of public utility and shall be subject to the provisions prescribed by the States.

In the cases to which the two foregoing paragraphs refer, the ownership of the Nation is inalienable and may not be lost by prescription; concessions shall be granted by the Federal Government to private parties or civil or commercial corporations organized under the laws of Mexico, only on condition that said resources be regularly developed, and on the further condition that the legal provisions be observed.

Legal capacity to acquire ownership of lands and waters of the nation shall be governed by the following provisions:

1. Only Mexicans by birth or naturalization and Mexican companies have the right to acquire ownership in lands, waters and their appurtenances, or to obtain concessions to develop mines, waters or mineral fuels in the Republic of Mexico. The Nation may grant the same right to foreigners, provided they agree before the Department of Foreign Affairs to be considered Mexicans in respect to such property, and accordingly not to invoke the protection of their Governments in respect to the same, under penalty, in case of breach, of forfeiture to the Nation of property so acquired. Within a zone of

1857

1917

100 kilometers from the frontiers, and of 50 kilometers from the sea coast, no foreigner shall under any conditions acquire direct ownership of lands and waters.

II. The religious institutions known as churches, irrespective of creed, shall in no case have legal capacity to acquire, hold or administer real property or loans made on such real property¹⁰; all such real property or loans as may be at present held by the said religious institutions, either on their own behalf or through third parties, shall vest in the Nation, and any one shall have the right to denounce property so held. Presumptive proof shall be sufficient to declare the denunciation well-founded. Places of public worship are the property of the Nation, as represented by the Federal Government, which shall determine which of them may continue to be devoted to their present purposes. Episcopal residences, rectories, seminaries, orphan asylums or collegiate establishments of religious institutions, convents or any other buildings built or designed for the administration, propaganda, or teaching of the tenets of any religious creed shall forthwith vest, as of full right, directly in the Nation, to be used exclusively for the public services of the Federation or of the States, within their respective jurisdictions. All places of public worship which shall later be erected shall be the property of the Nation.

III. Public and private charitable institutions for the sick and needy, for scientific research, or for the diffusion of knowledge, mutual

¹⁰ Compare second paragraph of Art. 27 of 1857.

1857

1917

aid societies or organizations formed for any other lawful purpose shall in no case acquire, hold or administer loans made on real property, unless the mortgage terms do not exceed ten years. In no case shall institutions of this character be under the patronage, direction, administration, charge or supervision of religious corporations or institutions, nor of ministers of any religious creed or of their dependents, even though either the former or the latter shall not be in active service.¹¹

IV. Commercial stock companies shall not acquire, hold, or administer rural properties. Companies of this nature which may be organized to develop any manufacturing, mining, petroleum or other industry, excepting only agricultural industries, may acquire, hold or administer lands only in an area absolutely necessary for their establishments or adequate to serve the purposes indicated, which the Executive of the Union or of the respective State in each case shall determine.

V. Banks duly organized under the laws governing institutions of credit may make mortgage loans on rural and urban property in accordance with the provisions of the said laws, but they may not own nor administer more real property than that absolutely necessary for their direct purposes; and they may furthermore hold temporarily for the brief term fixed by law such real property

¹¹ The second paragraph of the 1857 Constitution and Clauses II and III of the 1917 text are largely drawn from the "Leyes de Reforma." See note to Art. 130, p. 116.

1857

1917

as may be judicially adjudicated to them in execution proceedings.

VI. Properties held in common by co-owners, hamlets situated on private property, pueblos, tribal congregations and other settlements which, as a matter of fact or law, conserve their communal character, shall have legal capacity to enjoy in common the waters, woods and lands belonging to them, or which may have been or shall be restored to them according to the law of January 6, 1915, until such time as the manner of making the division of the lands shall be determined by law.

VII. Excepting the corporations to which Clauses III, IV, V and VI hereof refer, no other civil corporation may hold or administer on its own behalf real estate or mortgage loans derived therefrom, with the single exception of buildings designed directly and immediately for the purposes of the institution. The States, the Federal District and the Territories, as well as the municipalities throughout the Republic, shall enjoy full legal capacity to acquire and hold all real estate necessary for public services.

The Federal and State laws shall determine within their respective jurisdictions those cases in which the occupation of private property shall be considered of public utility; and in accordance with the said laws the administrative authorities shall make the corresponding declaration. The amount fixed as compensation for the expropriated property shall be based on the sum at which the said

1857

1917

property shall be valued for fiscal purposes in the catastral or revenue offices, whether this value be that manifested by the owner or merely impliedly accepted by reason of the payment of his taxes on such a basis, to which there shall be added ten per cent. The increased value which the property in question may have acquired through improvements made subsequent to the date of the fixing of the fiscal value shall be the only matter subject to expert opinion and to judicial determination. The same procedure shall be observed in respect to objects whose value is not recorded in the revenue offices.

All proceedings, findings, decisions and all operations of demarcation, concession, composition, judgment, compromise, alienation, or auction which may have deprived properties held in common by co-owners, hamlets situated on private property, settlements, congregations, tribes and other settlement organizations still existing since the law of June 25, 1856, of the whole or a part of their lands, woods and waters, are declared null and void; all findings, resolutions and operations which may subsequently take place and produce the same effects shall likewise be null and void. Consequently all lands, forests and waters of which the above-mentioned settlements may have been deprived shall be restored to them according to the decree of January 6, 1915, which shall remain in force as a constitutional law. In case the adjudication of lands, by way of restitution,

1857

1917

be not legal in the terms of the said decree, which adjudication have been requested by any of the above entities, those lands shall nevertheless be given to them by way of grant, and they shall in no event fail to receive such as they may need. Only such lands, title to which may have been acquired in the divisions made by virtue of the said law of June 25, 1856, or such as may be held in undisputed ownership for more than ten years are excepted from the provision of nullity, provided their area does not exceed fifty hectares.¹¹ Any excess over this area shall be returned to the commune and the owner shall be indemnified. All laws of restitution enacted by virtue of this provision shall be immediately carried into effect by the administrative authorities. Only members of the commune shall have the right to the lands destined to be divided, and the rights to these lands shall be inalienable so long as they remain undivided; the same provision shall govern the right of ownership after the division has been made. The exercise of the rights pertaining to the Nation by virtue of this article shall follow judicial process; but as a part of this process and by order of the proper tribunals, which order shall be issued within the maximum period of one month, the administrative authorities shall proceed without delay to the occupation, administration, auction, or sale of the lands and waters in question, together with all their appurtenances, and in no case may the acts of the said authorities be set

¹¹ 1 hectare=2.47 acres.

1857

1917

aside until final sentence is handed down.

During the next constitutional term, the Congress and the State Legislatures shall enact laws, within their respective jurisdictions, for the purpose of carrying out the division of large landed estates, subject to the following conditions:

(a) In each State and Territory there shall be fixed the maximum area of land which any one individual or legally organized corporation may own.

(b) The excess of the area thus fixed shall be subdivided by the owner within the period set by the laws of the respective locality; and these subdivisions shall be offered for sale on such conditions as the respective governments shall approve, in accordance with the said laws.

(c) If the owner shall refuse to make the subdivision, this shall be carried out by the local government, by means of expropriation proceedings.

(d) The value of the subdivisions shall be paid in annual amounts sufficient to amortize the principal and interest within a period of not less than twenty years, during which the person acquiring them may not alienate them. The rate of interest shall not exceed five per cent per annum.

(e) The owner shall be bound to receive bonds of a special issue to guarantee the payment of the property expropriated. With this end in view, the Congress shall issue a law authorizing the States to issue bonds to meet their agrarian obligations.

1857

Art. 28. There shall be no private nor governmental monopolies of any kind whatsoever, nor any prohibitions even under cover of protection to industry, excepting only those relating to the coinage of money, the postal service, and the privileges which, for a limited time, the law may concede to inventors or improvers of inventions.

1917

(f) The local laws shall govern the extent of the family patrimony, and determine what property shall constitute the same on the basis of its inalienability; it shall not be subject to attachment nor to any charge whatever.

All contracts and concessions made by former governments from and after the year 1876 which shall have resulted in the monopoly of lands, waters and natural resources of the Nation by a single individual or corporation, are declared subject to revision, and the Executive is authorized to declare those null and void which seriously prejudice the public interest.

Art. 28. There shall be no private nor governmental monopolies of any kind whatsoever in the United States of Mexico; nor exemption from taxation; nor any prohibition even under cover of protection to industry, excepting only those relating to the coinage of money, to the postal, telegraphic, and radio-telegraphic services, to the issuance of bills by a single banking institution to be controlled by the Federal Government, and to the privileges which for a limited period the law may concede to authors and artists for the reproduction of their work; and lastly, to those granted inventors or improvers of inventions for the exclusive use of their inventions.

The law will accordingly severely punish and the authorities diligently prosecute any accumulating or cornering by one or more persons of necessities for the purpose of bringing about a rise in

1857

1917

price; any act or measure which shall stifle or endeavor to stifle free competition in any production, industry, trade or public service; any agreement or combination of any kind entered into by producers, manufacturers, merchants, common carriers or other public or quasi-public service, to stifle competition and to compel the consumer to pay exorbitant prices; and in general whatever constitutes an unfair and exclusive advantage in favor of one or more specified person or persons to the detriment of the public in general or of any special class of society.

Associations of labor organized to protect their own interests shall not be deemed a monopoly. Nor shall coöperative associations or unions of producers be deemed monopolies when, in defense of their own interests or of the general public, they sell directly in foreign markets national or industrial products which are the principal source of wealth of the region in which they are produced, provided they be not necessities, and provided further that such associations be under the supervision or protection of the Federal Government or of that of the States, and provided further that authorization be in each case obtained from the respective legislative bodies. These legislative bodies may, either on their own initiative or on the recommendation of the executive, revoke, whenever the public interest shall so demand, the authorization granted for the establishment of the associations in question.

1857

Art. 29. In cases of invasion, grave disturbance of the public peace, or any other emergency which may place society in grave danger, the President of the Republic, and no one else, shall have the power to suspend, with the advice of the council of ministers and with the approval of the Congress, and, in the recess thereof, of the Permanent Committee, the guarantees granted by this Constitution **excepting those ensuring the life of man**; but such suspension shall in no case be confined in its effects to a particular individual, but shall be made by means of a general decree, and only for a limited time.

If the suspension occur while the Congress is in session, this body shall grant such powers as in its judgment the executive may need to meet the situation; if the suspension occur while the Congress is in recess, the Permanent Committee shall forthwith convoke the Congress for the granting of such powers.

SECTION II

Of Mexicans

Art. 30. Mexicans are:

I. All persons born, within or without the Republic, of Mexican parents.

II. Aliens naturalized in conformity with the laws of the Federation.

III. Aliens who acquire real estate in the Republic, or have Mexican children, if they do not

1917

Art. 29. In cases of invasion, grave disturbance of the public peace, or any other emergency which may place society in grave danger or conflict, the President of the Republic of Mexico, and no one else, with the concurrence of the council of ministers, and with the approval of the Congress, or if the latter shall be in recess, of the Permanent Committee, shall have power to suspend throughout the whole Republic or in any portion thereof, *such guarantees as shall be a hindrance in meeting the situation promptly and readily*; but such suspension shall in no case be confined to a particular individual, but shall be made by means of a general decree and only for a limited period. If the suspension occur while the Congress is in session, this body shall grant such powers as in its judgment the executive may need to meet the situation; if the suspension occur while the Congress is in recess, the Congress shall be convoked forthwith for the granting of such powers.

CHAPTER II

Of Mexicans

Art. 30.¹² A Mexican shall be *such either by birth or by naturalization*.

I. *Mexicans by birth are those born of Mexican parents, within or without the Republic, provided*

¹² Several of the provisions of this article follow the Naturalization Law of May 28, 1886, while others are a radical departure in the juridical theories hitherto accepted in Mexico.

1857

1917

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1857

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1857

declare their intention to retain their nationality.

1917

in the latter case the parents be also Mexicans by birth. Persons born within the Republic of foreign parentage shall likewise be considered Mexicans by birth, who within one year after they come of age shall declare to the Department of Foreign Affairs that they elect Mexican citizenship, and who shall furthermore prove to the said Department that they have resided within the country during the six years immediately prior to the said declaration.

II. Mexicans by naturalization are:

(a) The children of foreign parentage born in the country, who shall elect Mexican citizenship in the manner prescribed in the foregoing clause, and in whom the residence qualification required in the said section does not concur.

(b) Those persons who shall have resided in the country for five consecutive years, have an honest means of livelihood and shall have obtained naturalization from the said Department of Foreign Affairs.

(c) Those of mixed Indian and Latin descent who may have established residence in the Republic, and shall have manifested their intention to acquire Mexican citizenship.

In the cases stipulated in these sections, the law shall determine the manner of proving the requisites therein demanded.

Art. 31. It shall be the duty of every Mexican:

I. To defend the independence, the territory, the honor, the rights and interests of his country.

Art. 31. It shall be the duty of every Mexican:

I. To compel the attendance at either private or public schools of their children or wards, when

1857

II. To serve in the army or the national guard pursuant to the respective organic laws. [As amended, June 10, 1898.]

III. To contribute in the proportional and equitable manner provided by law, toward the public expenses of the Federation, the State and the municipality in which he resides.

Art. 32. Mexicans shall be preferred under equal circumstances to foreigners for all public employments, offices, or commissions, when citizenship is not indispensable. Laws shall be enacted to improve the condition of industrious Mexicans, by rewarding those who distinguish themselves in any science or art, to foster labor, and to found colleges and manual training schools.

1917

under fifteen years of age, in order that they may receive primary instruction and military training for such periods as the law of public instruction in each State shall determine.

II. *To attend on such days and at such hours as the town council shall in each case prescribe, to receive such civic instruction and military training as shall fit them to exercise their civic rights, shall make them skillful in the handling of arms and familiar with military discipline.*

III. *To enlist and serve in the national guard, pursuant to the respective organic law for the purpose of preserving and defending the independence, territory, honor, rights and interests of the country, as well as domestic peace and order.*

IV. *To contribute in the proportional and equitable manner provided by law toward the public expenses of the Federation, the State and the municipality in which he resides.*

Art. 32. Mexicans shall be preferred under equal circumstances to foreigners *for all kinds of concessions* and for all public employments, offices or commissions, when citizenship is not indispensable. *No foreigner shall serve in the army nor in the police corps nor in any other department of public safety during times of peace.*

Only Mexicans by birth may belong to the national navy, or fill any office or commission therein. The same requisite shall be required for captains, pilots, mas-

1857

SECTION III

Of Aliens

Art. 33. Aliens are those who do not possess the qualifications prescribed by Article 30. They shall be entitled to the guarantees granted by Section I, Title I, of the present Constitution, except that in all cases the Government has the right to expel undesirable foreigners. They are under obligation to contribute to the public expenses as the law may provide, and to obey and respect the institutions, laws, and authorities of the country, subjecting themselves to the decisions and sentences of the tribunals, and shall not be entitled to seek other redress than that which the laws concede to Mexicans.

SECTION IV

Of Mexican Citizens

Art. 34. Mexican citizenship shall be enjoyed only by those Mexicans who have the following qualifications:

I. Are over 21 years of age, if unmarried, and over 18, if married.

II. Have an honest means of livelihood.

Art. 35. The prerogatives of citizens are:

I. To vote at popular elections.

II. To be eligible for any elec-

1917

ters and chief engineers of Mexican merchant ships, as well as for two-thirds of the members of the crew.

CHAPTER III

Of Aliens

Art. 33. Aliens are those who do not possess the qualifications prescribed by Article 30. They shall be entitled to the guarantees granted by Chapter I, Title I, of the present Constitution; but the *Executive* shall have the *exclusive* right to expel from the Republic forthwith, and without judicial process, *any foreigner whose presence he may deem inexpedient*.

No foreigner shall meddle in any way whatsoever in the political affairs of the country.

CHAPTER IV

Of Mexican Citizens

Art. 34. [Identical]

Art. 35. [Identical]

1857

tive office and be qualified for any other office or commission, provided they have the other qualifications required by law.

III. To assemble for the purpose of discussing the political affairs of the country.

IV. To serve in the army or national guard for the defense of the Republic and its institutions, as by law determined. [As amended June 10, 1898.]

V. To exercise the right of petition in any matter whatever.

Art. 36. It shall be the duty of every Mexican citizen:

I. To register in the polls of the municipality in which he lives, setting forth the property which he owns, if any, or the industry, profession, or labor by which he subsists.

II. To enlist in the national guard.

III. To vote at popular elections in the district to which he belongs.

IV. To fill the elective federal offices to which he may be chosen, and which in no case shall be gratuitous.

Art. 37. Citizenship shall be lost:

I. By naturalization in a foreign country.

II. By officially serving the government of another country or accepting its decorations, titles, or employment without

1917

previous permission of the Federal Congress, excepting those who, according to the provisions of the law, may be excepted.

Art. 36. It shall be the duty of every Mexican citizen:

Art. 36. It shall be the duty of every Mexican citizen:

I. To register in the polls of the municipality, setting forth any property he may own and his professional or industrial pursuit, or occupation; and also to register in the electoral registration lists, as by law determined.

II. To enlist in the national guard.

III. To vote at popular elections in the electoral district to which he belongs.

IV. To fill the elective Federal or State offices to which he may be chosen, which service shall in no case be gratuitous.

V. To serve on the town council of the municipality wherein he resides and to perform all electoral and jury service.

Art. 37. Citizenship shall be lost:

I. By naturalization in a foreign country.

II. By officially serving the government of another country, or accepting its decorations, titles or employment without

1857

previous permission of the Federal Congress, excepting literary, scientific, and humanitarian titles, which may be accepted freely.

Art. 38. The law shall determine the cases and the form in which the rights of citizenship may be lost or suspended, and the manner in which they may be regained.

1917

previous permission of the Federal Congress, excepting literary, scientific and humanitarian titles which may be accepted freely.

III. *By compromising themselves in any way before ministers of any religious creed or before any other person not to observe the present Constitution, or the laws arising thereunder.*

Art. 38. *The rights or prerogatives of citizenship shall be suspended for the following reasons:*

I. *Through failure to comply, without sufficient cause, with any of the obligations imposed by Article 36. This suspension shall last for one year and shall be in addition to any other penalties prescribed by law for the same offense.*

II. *Through being subjected to criminal prosecution for an offense punishable with imprisonment, such suspension to be reckoned from the date of the formal order of commitment.*

III. *Throughout the term of imprisonment.*

IV. *Through vagrancy or habitual drunkenness, declared in the manner provided by law.*

V. *Through being a fugitive from justice, the suspension to be reckoned from the date of the order of arrest until the prescription of the criminal action.*

VI. *Through any final sentence which shall decree as a penalty such suspension.*

The law shall determine the cases in which civic rights may be lost or suspended and the manner in which they may be regained.

1857

1917

TITLE II

TITLE II

SECTION I

CHAPTER I

*Of the National Sovereignty and
Form of Government*

*Of the National Sovereignty and
Form of Government*

Art. 39. The national sovereignty is vested essentially and originally in the people. All public power emanates from the people, and is instituted for their benefit. The people have at all times the inalienable right to alter or modify the form of their government.

Art. 39. [Identical]

Art. 40. It is the will of the Mexican people to constitute themselves into a democratic, federal, representative republic, consisting of States, free and sovereign in all that concerns their internal affairs, but united in a federation according to the principles of this fundamental law.

Art. 40. [Identical]

Art. 41. The people exercise their sovereignty through the federal powers in the matters belonging to the Union, and through those of the States in the matters relating to the internal administration of the latter. This power shall be exercised in the manner respectively established by the Constitutions, both Federal and State. The constitutions of the States shall in no case contravene the stipulations of the Federal constitution.

Art. 41. [Identical]

1857

1917

SECTION II

Of the Integral Parts of the Federation and the National Territory

Art. 42. The national territory comprises the integral parts of the Federation and the adjacent islands in both oceans.

Art. 43. The integral parts of the Federation are: the States of Aguascalientes, Campeche, Coahuila, Colima, Chiapas, Chihuahua, Durango, Guanajuato, Guerrero, Hidalgo, Jalisco, México, Michoacán, Morelos, Nuevo León, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tabasco, Tamaulipas, Tlaxcala, Valle de México, Vera Cruz, Yucatán, Zacatecas, the Territory of Lower California, the Territory of Tepic, formed from the seventh canton of Jalisco, and the Territory of Quintana Roo. The Territory of Quintana Roo shall be formed by the eastern portion of the Peninsula of Yucatán; it shall be bounded by a line which, drawn from the northern coast of the Gulf of Mexico, follows the arc of the meridian 87° 32' (Longitude West of Greenwich) to its intersection with parallel 21°, and thence till it meets the parallel passing through the Southern Tower of Chemax, twenty kilometers to the east of this town; and reaching the vertex of the angle formed by the boundaries between the States of Yucatán and Campeche, near Put, goes southward to the parallel dividing the Republics of Mexico and Guatemala. [As amended November 24, 1902.]

Art. 44. The States of Aguascalientes, Chiapas, Chihuahua, Durango, Guerrero, México, Puebla, Querétaro, Sinaloa, Sonora, Tamaulipas, and the Territory of Lower California shall preserve the limits which they now have.

CHAPTER II

Of the Integral Parts of the Federation and the National Territory

Art. 42. The national territory comprises the integral parts of the Federation and the adjacent islands in both oceans. *It likewise comprises the Island of Guadalupe, those of Revillagigedo, and that of "La Pasión," situated in the Pacific Ocean.*

Art. 43. The integral parts of the Federation are: The States of Aguascalientes, Campeche, Coahuila, Colima, Chiapas, Chihuahua, Durango, Guanajuato, Guerrero, Hidalgo, Jalisco, México, Michoacán, Morelos, *Nayarit*¹³, Nuevo León, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tabasco, Tamaulipas, Tlaxcala, Vera Cruz, Yucatán, Zacatecas, the Federal District, the Territory of Lower California, and the Territory of Quintana Roo.

Art. 44. The Federal District shall embrace its present territory; in the event of the removal of the Federal Powers to some other place it shall be created into the State of the Valley of Mexico, with such boundaries and area as the Federal Congress shall assign to it.¹⁴

¹³ See Art. 47 of 1917.

¹⁴ Substantially identical with Art. 46 of 1857.

1857

Art. 45. The States of Colima and Tlaxcala shall preserve in their new character of States the limits which they had as Territories of the Federation.

Art. 46. The State of the Valley of Mexico shall consist of the territory constituting at present the Federal District, but it shall not be a State until after the Supreme Federal Powers move to some other place.

Art. 47. The State of Nuevo León and Coahuila shall comprise the territory formerly belonging to the two separate States of which it now consists, except a part of the Bonanza Hacienda, which shall be added to Zacatecas, exactly as it was before its annexation to Coahuila.

Art. 48. The States of Guana-juato, Jalisco, Michoacán, Oaxaca, San Luis Potosí, Tabasco, Vera Cruz, Yucatán, and Zacatecas shall recover the extent and limits which they had on the thirty-first of December, eighteen hundred and fifty-two, with the alterations established in the following article.

Art. 49. The town of Contepéc, now belonging to Guana-juato, shall be annexed to Michoacán. The municipality of Ahualulco, belonging to Zacatecas, shall be annexed to San Luis Potosí. The municipalities of Ojo Caliente and San Francisco de los Adames, belonging to San Luis, as well as the towns of Nueva Tlaxcala and

1917

Art. 45. The States and Territories of the Federation shall keep their present boundaries and areas, provided no boundary question shall exist between them.

Art. 46. The States having pending boundary questions shall arrange or settle them as provided by this Constitution.

Art. 47. *The State of Nayarit shall have the territorial area and boundaries at present comprising the Territory of Tepic.*

Art. 48. *The islands in both oceans embraced within the national territory shall depend directly on the Federal Government, excepting those over which the States have up to the present time exercised jurisdiction.*

1857

San Andrés del Teul, belonging to Jalisco, shall be annexed to Zacatecas. The department of Tuxpam shall continue to form a part of Vera Cruz. The canton of Huimanguillo, belonging to Vera Cruz, shall be annexed to Tabasco.

TITLE III

Of the Division of Powers

Art. 50. The supreme power of the Federation is divided for its exercise into legislative, executive, and judicial. Two or more of these powers shall never be united in one person or corporation, nor shall the legislative power be vested in one individual.

SECTION I

Of the Legislative Power

Art. 51. The legislative power of the United States of Mexico is vested in a general Congress which shall consist of a House of Representatives and a Senate. [As amended November 13, 1874.]

PARAGRAPH I

Of the Election and Installation of the Congress

Art. 52. The House of Representatives shall consist of representatives of the Nation, all of whom shall be elected every two years by the citizens of Mexico. [As amended November 13, 1874.]

1917

TITLE III

CHAPTER I

Of the Division of Powers

Art. 49. The supreme power of the Federation is divided for its exercise into legislative, executive and judicial.

Two or more of these powers shall never be united in one person or corporation, nor shall the legislative power be vested in one individual *except in the case of extraordinary powers granted to the executive, in accordance with the provisions of Article 29.*

CHAPTER II

Of the Legislative Power

Art. 50. [Identical]

SECTION I

Of the Election and Installation of the Congress

Art. 51. [Identical]

1857

Art. 53. One representative shall be chosen for each 60,000 inhabitants or for any fraction thereof exceeding 20,000, on the basis of the general census of the Federal District and of each State and Territory. Any State or Territory in which the population shall be less than that fixed by this article shall, nevertheless, elect one representative. [As amended December 18, 1901.]

Art. 54. There shall be elected an alternate for each representative.

Art. 55. The election of representatives shall be direct, in accordance with the provisions of the electoral law. [As amended April 26, 1912.]

Art. 56. Representatives shall have the following qualifications: To be Mexican citizens in the enjoyment of their rights; to be twenty-five years of age on the day of the opening of the session; to be domiciled in the State or Territory in which the election is held, and not to belong to the ecclesiastical state. The domicile shall not be lost through absence in the discharge of any elective office.

1917

Art. 52. [Identical]

Art. 53. [Identical]

Art. 54. [Identical]

Art. 55. Representatives shall have the following qualifications:

I. They shall be Mexican citizens *by birth*¹⁸ and in the enjoyment of their rights.

II. They shall be over twenty-five years of age *on the day of election*.

III. They shall be *natives* of the States or Territories respectively electing them, or domiciled and *actually resident therein for six months immediately prior to the election*. The domicile shall not be lost through absence in the discharge of any elective office.

IV. They shall not be in active service in the Federal army, not have any command in the police corps or rural constabulary in the districts where the elections respectively take place, for at least ninety days immediately prior to the election.

¹⁸ See Art. 30 of 1917.

1857

Art. 57. The offices of senator and representative are incompatible with any other office or commission of the Federal Government for which any emolument is received. [*As amended November 13, 1874.*]

Art. 58. Representatives and senators are disqualified, from the day of their election until the day on which their term expires, from accepting from the Federal executive without previous permission of the respective House any salaried office.

1917

V. They shall not hold the office of secretary nor assistant secretary of any executive department nor of justice of the supreme court, unless they shall have resigned therefrom ninety days immediately prior to the election.

No State Governor, Secretary of State of the several States, nor State Judge shall be eligible in the Districts within their several jurisdictions, unless they shall have resigned from their office ninety days immediately prior to the day of election.

VI. They shall not be ministers of any religious creed.

Art. 56. The Senate shall consist of two Senators from each State and two from the Federal District, chosen in direct election.

Each State Legislature shall certify to the election of the candidate who shall have obtained a majority of the total number of votes cast.

[Identical with first part of Art. 58 A of 1857.]

Art. 57. There shall be elected an alternate for each senator.

[Identical with closing sentence of Art. 58 A of 1857.]

Art. 58. Each senator shall serve four years. The senate shall be renewed by half every two years.

[Identical with opening sentence of Art. 58 B of 1857.]

[Identical with Art. 62 of 1917, excepting italicized portion.]

1857

The same provision is applicable to alternates when in active service.

A. The Senate shall consist of two Senators for each State and two for the Federal District. The election of senators shall be direct in the first degree. Each State legislature shall declare the candidate elected who shall have obtained a majority of the votes cast or it shall choose, in the manner prescribed by the electoral law, from among those obtaining a plurality. There shall be elected an alternate for each Senator.

B. The Senate shall be renewed by half every two years. Senators occupying the second place in the representation of each State, shall vacate their seats at the end of the first two years. After the second year the withdrawal shall be according to seniority.

C. The qualifications necessary to be a senator shall be the same as those necessary to be a representative, except as to the age, which in the case of a senator who shall be at least thirty years of age on the day of the opening of the session. [As amended November 13, 1874.]

Art. 59. Representatives and senators are inviolable for opinions expressed by them in the discharge of their duties, and shall never be called to account for them. [As amended November 13, 1874.]

Art. 60. Each House shall be the judge of the election of its

1917

[Compare Art. 58 of 1917.]

Art. 59. The qualifications necessary to be a senator shall be the same as those necessary to be a representative, excepting that of age, which shall be over *thirty-five on the day of election.*

[Identical with Art. 61 of 1917.]

Art. 60. Each House shall be the judge of the election of its

1857

members, and shall decide all questions arising therefrom.
[As amended November 13, 1874.]

Art. 61. The Houses shall not open their sessions nor exercise their functions without a quorum, in the Senate of two-thirds, and in the House of Representatives of a majority of the total of its members; but the members present of either House shall meet on the appointed day and compel through the proper penalties the attendance of the

1917

members and shall decide all questions arising therefrom.
Its decisions shall be final.

Art. 61. Representatives and Senators are inviolable for opinions expressed by them in the discharge of their duties, and shall never be called to account for them.

[Identical with Art. 59 of 1857.]

Art. 62. Representatives and senators shall be disqualified during the terms for which they have been elected from holding any Federal or State commission or office for which any emolument is received without previous permission of the respective House; in the event of their accepting such commission or office they shall forthwith lose their representative character for such time as they shall hold such appointive office. The same provision shall apply to alternate representatives and senators, when in active service. *The violation of this provision shall be punished by forfeiture of the office of representative or senator.*

[Identical with Art. 58 of 1857 excepting italicized portion.]

Art. 63. The Houses shall not open their sessions nor exercise their functions without a quorum, in the Senate of two-thirds, and in the House of Representatives of a majority of the total membership; but the members present of either House shall meet on the day appointed by law and compel the attendance of the absentees *within the next*

1857

absentees. [As amended November 13, 1874.]

1917

thirty days, and they shall warn them that failure to comply with this provision shall be taken to be a refusal of office, and the corresponding alternates shall be summoned forthwith; the latter shall have a similar period within which to present themselves, and on their failure to do so the seats shall be declared vacant and new elections called.

Representatives or Senators who shall be absent during ten consecutive days without proper cause or without leave of the President of the respective House, notice of which shall be duly communicated to the House, shall be understood as waiving their right to attend until the next session, and their alternates shall be summoned without delay.

If there shall be no quorum to organize either of the Houses or to continue their labors, once organized, the alternates shall be ordered to present themselves as soon as possible for the purpose of taking office until the expiration of the thirty days hereinbefore mentioned.

Art. 64. No representative or senator who shall fail to attend any daily session without proper cause or without previous permission of the respective House, shall be entitled to the compensation corresponding to the day on which he shall have been absent.

Art. 62. The Congress shall hold two ordinary sessions each year: the first shall begin on the sixteenth of September and end on the fifteenth of December;

Art. 65. The Congress shall meet on the first day of September of each year in regular session for the consideration of the following matters:

1857

but this period may be extended for thirty working days. The second shall begin on the first of April and end on the last day of May, but may be extended for fifteen working days. [As amended November 13, 1874.]

1917

I. To audit the accounts of the previous year which shall be submitted to the House of Representatives not later than ten days after the opening of the session. The audit shall not be confined to determining whether the expenditures do or do not conform with the respective items in the Budget, but shall comprise an examination of the exactness of, and authorization for, payments made thereunder, and of any liability arising from such payments.

No other secret items shall be permitted than those which the budget may consider necessary as such; these amounts shall be paid out by the secretaries of executive departments under written orders of the President.

II. To examine, discuss and approve the budget for the next fiscal year, and to lay such taxes as may be needed to meet the expenditures.

III. To study, discuss and vote on all bills presented and to discuss all other matters incumbent upon the Congress by virtue of this Constitution.

Art. 66. The regular session of the Congress shall last the period necessary to deal with all of the matters mentioned in the foregoing article, but it may not be extended beyond the thirty-first day of December of the same year. Should both Houses fail to agree as to adjournment prior to the above date, the matter shall be decided by the executive.

Art. 67. The Congress shall meet in extraordinary session whenever so summoned by the

1857

Art. 63. At the opening of the sessions of the Congress the President shall be present and make an address in which he shall give information on the state of the country. The President of the Congress shall reply in general terms.

Art. 68. Both Houses shall hold their meetings in the same place and shall not move to another without having first agreed upon the moving and the time and manner of accomplishing it, as well as upon the place of meeting, which shall be the same for both Houses. If both Houses agree to change their meeting place but disagree as to the time, manner and place the President shall settle the question by choosing one of the two proposals. Neither House may suspend its sessions for more than three days without the consent of the other.

Art. 69. The President of the Republic shall attend at the opening of the sessions of the Congress, whether regular or extraordinary, and shall submit a report in writing; this report shall, in the former case, relate to the general state of the Union; and in the latter, it shall explain to the Congress or to the House addressed the reasons or causes which rendered the call

1917

President, but in such event it shall consider only the matter or matters submitted to it by the President, who shall enumerate it or them in the respective call. The President shall have power to convene in extraordinary session only one of the Houses when the matter to be referred to it pertains to its exclusive jurisdiction.

[Substantially identical with Arts. 68 & 69 of 1857.]

Art. 68. Both Houses shall hold their meetings in the same place and shall not move to another without having first agreed upon the moving and the time and manner of accomplishing it, as well as upon the place of meeting, which shall be the same for both Houses. If both Houses agree to change their meeting place but disagree as to the time, manner and place the President shall settle the question by choosing one of the two proposals. Neither House may suspend its sessions for more than three days without the consent of the other.

[Identical with Art. 71 G of 1857 excepting italicized portion.]

Art. 69. The President of the Republic shall attend at the opening of the sessions of the Congress, whether regular or extraordinary, and shall submit a report in writing; this report shall, in the former case, relate to the general state of the Union; and in the latter, it shall explain to the Congress or to the House addressed the reasons or causes which rendered the call

1857

Art. 64. Every measure of the Congress shall be in the form of a law or decree. The laws or decrees shall be communicated to the Executive after having been signed by the Presidents of both Houses and by one of the secretaries of each. When promulgated, the enacting clause shall read as follows:

"The Congress of the United States of Mexico decrees (text of the law or decree)." [As amended November 13, 1874.]

PARAGRAPH II

Of the Origin and Formation of Laws

Art. 65. The right to originate legislation pertains:

I. To the President of the Republic

II. To the Representatives and Senators of the Congress

III. To the State Legislatures. [As amended November 13, 1874.]

Art. 66. Bills submitted by the President of the Republic, by State Legislatures or delegations thereof, shall be at once referred to committee. Those introduced by representatives or senators shall be subject to the rules of procedure. [As amended November 13, 1874.]

1917

necessary and the matters requiring immediate attention.

Art. 70. [Identical]

SECTION II

Of the Origin and Formation of the Laws

Art. 71. The right to originate legislation pertains:

I. To the President of the Republic;

II. To the Representatives and Senators of the Congress;

III. To the State Legislatures.

Bills submitted by the President of the Republic, by State Legislatures or by delegations of the States shall be at once referred to committee. Those introduced by representatives or senators shall be subject to the rules of procedure.

[Identical with Arts. 65 and 66 of 1857]

1857

Art. 67. No bill rejected in the House of origin before passing to the other House shall be reintroduced during the session of that year. [*As amended November 13, 1874.*]

Art. 68. The second period of sessions shall be devoted with preference over all other matters, to the making of the necessary appropriations for the support of the Government in the following fiscal year, the levying of the taxes necessary to meet the expenses, and the examination of the accounts of the past year submitted by the Executive.

Art. 69. The Executive shall transmit to the House of Representatives, on the eve of the last day of the session, the accounts of the year and the budget for the next. They shall be referred to a special committee, which shall be appointed on that day, consisting of five members, whose duty it shall be to examine both documents and report thereon at the second meeting of the second period. [*As amended November 13, 1874.*]

Art. 70. Legislative measures may be originated in either House, excepting bills dealing with loans, taxes or imposts, or with the raising of troops which must have their origin in the House of Representatives. [*As amended November 13, 1874.*]

Art. 71. Bills, action on which shall not pertain exclusively to

1917

[Identical with Art. 72 (g) of 1917]

[Identical with Art. 72 (h) of 1917]

Art. 72. [Identical]

1857

one of the Houses, shall be discussed first by one and then by the other, according to the rules of procedure as to the form, time of presentation and other details relative to discussions and votes.

A. After a bill has been approved in the House where it originated it shall be sent to the other House for consideration. If passed by the latter it shall be transmitted to the President who, if he has no observations to make thereto, shall immediately promulgate it.

B. Bills not returned by the Executive within ten working days with his observations to the House in which they originated, shall be considered approved, unless during the said ten days the Congress shall have adjourned or suspended its sessions, in which event they shall be returned on the first working day after the Congress shall have reconvened.

C. Bills rejected in whole or in part by the Executive shall be returned with his observations to the House where they originated. They shall be discussed anew by the latter and if passed by a majority vote shall be sent to the other. If approved by it, also by the same majority vote, the bill shall become a law and shall be sent to the Executive for promulgation. In such cases the voting in both Houses shall be by yeas and nays.

1917

(a) [Identical]

(b) [Identical]

(c) Bills rejected in whole or in part by the Executive shall be returned with his observations to the House where they originated. They shall be discussed anew by this House and if confirmed by a *two-thirds majority vote of the total membership* shall be sent to the other House for reconsideration. If approved by it, also by the same majority vote, the bill shall become law and shall be returned to the Executive for promulgation.

The voting in both Houses shall be by yeas and nays.

1857

D. Bills totally rejected by the House not originating them shall be returned with the proper observations to the House of origin. If examined anew and approved by a majority of the members present, they shall be returned to the House rejecting them, which shall once again take them under consideration, and if approved by it, likewise by the same majority vote, they shall be sent to the Executive for the purposes of Clause A; but if the said House fail to approve them, they shall not be reintroduced in the same session.

E. Bills rejected in part or modified or amended by the House of revision shall be discussed anew in the House of origin, but the discussion shall be confined to the portion rejected or to the amendments or additions, without the approved articles being altered in any respect. If the additions or amendments made by the House of revision be approved by a majority vote of the members present in the House of origin, the bill shall be transmitted to the Executive for the purposes of Clause A; but if the amendments or additions by the House of revision be rejected by a majority vote of the House of origin they shall be returned to the former House in order that the reasons set forth by the latter may be taken into consideration.

1917

(d) [Identical]

(e) [Identical]

1857

If in this second revision the said additions or amendments be rejected by a majority vote of the members present the portion of the bill which has been approved by both Houses shall be sent to the Executive for the purposes of Clause A. If the House of revision insist by a majority vote of the members present upon the additions or amendments, no action shall be taken on the whole bill until the next session, unless both Houses agree, by a majority vote of the members present, to the promulgation of the law without the articles objected to, which shall be left till the next session, when they shall be then discussed and voted upon.

F. The same formalities as are required for the enactment of laws shall be observed for their interpretation, amendment or repeal.

G. Both Houses shall hold their meetings at the same place, and shall not move to another without first having agreed upon the moving and the time and manner of accomplishing it, as well as upon the place of meeting which shall be the same for both Houses. If both Houses agree to change their meeting place, but disagree as to the time, manner or locality, the Executive shall settle the question. Neither House shall adjourn for more than three days without the consent of the other.

1917

(f) [Identica]

[Identical with Art. 68 of 1917]

1857

1917

H. When Congress meets in extra session it shall deal exclusively with the matter or matters specified in the call. If the object of the extra session has not been accomplished at the time in which the ordinary session begins, there shall be, nevertheless, a formal closing of the extra session, and the unfinished business shall be taken up and discussed in the ordinary session.

The Executive shall not make any observations touching the resolutions of the Congress providing for an adjournment of its sessions, or passed by it when sitting as an electoral body or as a grand jury. [As amended November 13, 1874.]

(g) No bill rejected in the House of origin before passing to the other House shall be reintroduced during the session of that year.

[Identical with Art. 67 of 1857]

(h) Legislative measures may be originated in either House, excepting bills dealing with loans, taxes or imposts, or with the raising of troops which must have their origin in the House of Representatives.

[Identical with Art. 70 of 1857]

(i) Whenever a bill shall be presented to one House it shall be first discussed there unless one month shall have elapsed since it was referred to committee and not reported, in which event an identical bill may be presented and discussed in the other House.

(j) The President shall not make any observations touching the resolutions of the Congress or of either House when acting as an electoral body or as a grand jury, nor when the House of Representatives shall declare that there are grounds to impeach any high federal authority for official offences.

Nor shall he make any observations touching the order for a call issued by the Permanent Committee as provided in Article 84.

1857

PARAGRAPH III

Of the Powers of the Congress

Art. 72. The Congress shall have power:

I. To admit new States or Territories into the Federal Union, incorporating them into the Nation.

II. To grant statehood to Territories which have a population of eighty thousand inhabitants and the necessary means to provide for their political existence.

III. To form new States within the boundaries of existing ones, provided the following requisites are complied with:

1. That the section or sections aspiring to statehood have a population of one hundred and twenty thousand inhabitants at least;

2. That proof be given to the Congress that it has sufficient means to provide for its political existence;

3. That the legislatures of the States affected be heard as to the advisability or inadvisability of granting such statehood, which opinion shall be given within six months reckoned from the day on which the respective communication is forwarded;

4. That the opinion of the Executive of the Federal Government be also heard on the subject; this opinion shall be given within seven days after the date on which it was requested.

5. That the creation of the new State be voted upon favorably by two-thirds of the Repre-

1917

SECTION III

Of the Powers of the Congress

Art. 73. The Congress shall have power:

I. To admit new States or Territories into the Federal Union.

II. [Identical]

III. [Identical]

1857

representatives and Senators present in their respective Houses.

6. That the resolution of the Congress be ratified by a majority of the State Legislatures, upon examination of a copy of the record of the case, provided that the Legislatures of the States to which the section belongs shall have given their consent.

7. That the ratification referred to in the foregoing clause be given by two-thirds of the legislatures of the other States, if the legislatures of the States to which the Section belongs have not given their consent. [As amended November 13, 1874.]

IV. To settle finally the limits of the States, terminating the differences which may arise between them relative to the demarcation of their respective territories, except when the differences be of a litigious nature.

V. To change the residence of the supreme powers of the Federation.

VI. To legislate in all matters relating to the Federal District and the Territories.

1917

IV. [Identical]

V. [Identical]

VI. To legislate in all matters relating to the Federal District and the Territories, as hereinafter provided:

1. The Federal District and the Territories shall be divided into municipalities, each of which shall have the area and population sufficient for its own support and for its contribution toward the common expenses.

2. Each municipality shall be governed by a town council elected by direct vote of the people.

3. The Federal District and each of the Territories shall be administered by governors under the direct orders of the President of the Republic. The Governor of

1857

1917

the Federal District shall despatch with the President, and the Governor of each Territory shall despatch with the President through the duly constituted channels. The Governor of the Federal District and the Governor of each Territory shall be appointed by the President as d may be removed by him at will.

4. The Superior Judges and those of First Instance of the Federal District as well as of the Territories shall be named by the Congress, acting in each case as an electoral college. In the temporary or permanent absences of the said Superior Judges these shall be replaced by appointment of the Congress, and in recess by temporary appointments of the Permanent Committee. The organic law shall determine the manner of filling temporary vacancies in the case of judges, and shall designate the authority before whom they shall be called to account for any dereliction, excepting the provisions of this Constitution with regard to the responsibility of officials. From and after the year 1923 the Superior Judges and those of First Instance to which this clause refers may only be removed from office for bad conduct and after impeachment, unless they shall have been promoted to the next higher grade. From and after the said date the compensation enjoyed by said officials shall not be diminished during their term of office.

5. The office of the Public Attorney (Ministerio Publico) of the Federal District and of the

1857

VII. To lay the taxes necessary to meet the expenditures of the budget.

VIII. To establish the bases upon which the Executive may make loans on the credit of the nation; to approve the said loans and to acknowledge and order the payment of the national debt.

IX. To enact laws fixing the duties to be levied on foreign commerce, and to prevent by general provisions, onerous, restrictions from being imposed on interstate commerce.

X. To promulgate mining and commercial codes, which shall be binding throughout the whole Republic. The banking law shall form a part of the code of commerce. [As amended December 14, 1883.]

XI. To create or abolish Federal offices, and to fix, increase, or decrease the compensations assigned thereto.

XII. To confirm the nominations made by the Executive, of ministers, diplomatic agents, and

1917

Territories, shall be in charge of an Attorney General, who shall reside in the City of Mexico and of such Public Attorney or Attorneys as the law may determine; the said Attorney General shall be under the direct orders of the President of the Republic, who shall appoint and remove him at will.

VII. [Identical]

VIII. [Identical]

IX. To enact tariff laws on foreign commerce and to prevent restrictions from being imposed on interstate commerce.

X. To legislate for the entire Republic in all matters relating to mining, commerce, and institutions of credit, and to establish the sole bank of issue, as provided in Article 28 of this Constitution.

XI. [Identical]

1857

consuls, superior officers of the treasury, colonels and other superior officers of the national army and navy. [Transferred to Art. 72 B, II, Exclusive Powers of the Senate, November 13, 1874.]

XIII. To approve the treaties, agreements, or diplomatic conventions which the Executive may make. [Transferred to Art. 72 B, I, Exclusive Powers of the Senate, November 13, 1874.]

XIV. To declare war, upon examination of the facts submitted by the Executive.

XV. To regulate the manner in which letters of marque may be issued; to enact laws according to which prizes on sea and land shall be adjudged valid or invalid; and to frame the admiralty law for times of peace and war.

XVI. To grant or refuse permission to foreign troops to enter the territory of the Republic, and to allow fleets of other powers to remain for more than one month in the waters of the Republic.

[Transferred to Art. 72 B, III, Exclusive Powers of Senate, November 13, 1874.]

XVII. To allow national troops to go beyond the limits of the republic.

[Transferred to Art. 72 B, III, Exclusive Powers of Senate, November 13, 1874.]

XVIII. To raise and maintain the army and navy of the Union, and to regulate their organization and service.

XIX. To make rules for the organization **armament**, and

1917

XII. [Identical]

XIII. [Identical]

XIV. [Identical]

XV. To make rules for the organization and discipline of

1857

discipline of the national guard, reserving respectively to the citizens who compose it the appointment of the commanders and officers, and to the States the power of instructing it in conformity with the discipline prescribed by said regulations.

XX. To consent to the use by the Executive of the national guard outside of its respective States and Territories, determining the strength of the force required.

[Transferred to Art. 72 B, IV, Exclusive Powers of Senate, November 13, 1874.]

XXI. To enact laws on citizenship, naturalization, colonization, emigration, immigration and public health of the Republic.

1917

the National Guard, reserving for the citizens who compose it the right of appointing their respective commanders and officers, and to the States the power of instructing it in conformity with the discipline prescribed by the said regulations.

XVI. To enact laws on citizenship, naturalization, colonization, emigration, immigration and public health of the Republic.

1. The Public Health Service shall depend directly upon the President of the Republic, without the intervention of any executive department, and its general provisions shall be binding throughout the Republic.

2. In the event of epidemics of a grave or dangerous nature, of the invasion of diseases from abroad, the Public Health Service shall put into force without delay the necessary preventive measures, subject to their subsequent sanction by the President of the Republic.

3. The sanitary authorities shall have executive faculties and their determinations shall be obeyed by the administrative authorities of the country.

4. All measures which the Public Health Service shall have put into effect in its campaign against alcoholism and the sale of sub-

1857

XXII. To enact laws on the general means of communication and on post-roads and post-offices, to define and determine the waters subject to Federal jurisdiction and to enact laws as to the use and development of the same. [As amended June 20, 1908.]

XXIII. To establish mints, regulate the value and kinds of the national coin, fix the value of foreign moneys, and adopt a general system of weights and measures.

XXIV. To make rules for the occupation and alienation of public lands and the prices thereof.

XXV. To grant pardons for offenses subject to federal jurisdiction.

XXVI. To grant rewards and recompenses for eminent services rendered to the country or to humanity. [As amended June 2, 1882.]

XXVII. To extend for thirty working days the first period of its ordinary sessions.

XXVIII. To make rules for its internal government and to enact the necessary provisions to compel the attendance of absent Representatives and Senators and to punish the acts of commission or omission of those present.

1917

stances injurious to man and tending to degenerate the race shall be subsequently revised by the Congress, in such cases as fall within the jurisdiction of the latter.

XVII. To enact laws on general means of communication, postroads and post offices and to enact laws as to the use and development of the waters subject to the Federal jurisdiction.

XVIII. [Identical]

XIX. [Identical]

XX. To enact laws as to the organization of the diplomatic and consular services.

XXI. To define the crimes and offenses against the Nation and to fix the penalties therefor.

XXII. [Identical]

XXIII. [Identical]

1857

XXIX. To issue the organic law of the office of the Comptroller of the Treasury.

1917

XXIV. [Identical]

XXV. To sit as an electoral college and to name the Justices of the Supreme Court, and the Superior and Inferior Judges of the Federal District and Territories.

XXVI. To accept the resignation of the Justices of the Supreme Court and of the Superior and Inferior Judges of the Federal District and Territories, and to name substitutes in their absence and to appoint their successors.

XXVII. To establish professional schools of scientific research and fine arts, vocational, agricultural and trade schools, museums, libraries, observatories and other institutes of higher learning, until such time as these establishments can be supported by private funds. These powers shall not pertain exclusively to the Federal Government.

All degrees conferred by any of the above institutions shall be valid throughout the Republic.

XXVIII. To sit as an electoral college and to choose the person to assume the office of President of the Republic, either as a substitute President or as a President ad interim in the terms established by Articles 84 and 85 of this Constitution.

XXIX. To accept the resignation of the President of the Republic.

[Compare Art. 72 A, II of 1857.]

1857

XXX. To make all laws necessary for carrying into execution the foregoing powers and all other powers vested by this Constitution in the several branches of the Government.

A. The House of Representatives shall have the following exclusive powers:

I. To sit as an electoral college to exercise the powers conferred by law regarding the appointments of constitutional President and Vice President of the Republic, justices of the supreme court and senators for the Federal District. [*Amendment of May 6, 1904.*]

II. To pass upon the resignations and leaves of absence of the President and Vice President of the Republic and of the resignations of the justices of the supreme court. [*As amended May 6, 1904.*]

III. To watch, by means of a special committee, over the faithful performance by the Comptroller of the Treasury in the discharge of his duties.

IV. To appoint all the higher officers and other employees of the office of the Comptroller of the Treasury.

V. To act as a grand jury and to formulate articles of impeachment against the functionaries

1917

XXX. To audit the accounts which shall be submitted annually by the Executive; *this audit shall comprise not only the checking of the items disbursed under the Budget but the exactness of and authorization for the expenditures in each case.*¹⁷

XXXI. [Identical]

Art. 74. The House of Representatives shall have the following exclusive powers:

I. To sit as an electoral college to exercise the powers conferred by law as to the election of the President.

II. To watch by means of a committee appointed from among its own members over the faithful performance by the Comptroller of the Treasury in the discharge of his duties.

III. [Identical]

[Compare Art. 74, V, of 1917]

¹⁷ See Art. 72 A, VI, of 1857.

1857

mentioned in article 103 of the Constitution.

VI. To audit the accounts to be rendered yearly by the Executive, approve the annual budget, and originate taxation for the purpose of meeting the expenses of the Government.

1917

IV. To approve the annual budget, after a discussion as to what taxes must in its judgment be laid to meet the necessary expenditures.

V. To take cognizance of all charges brought against public officials, as herein provided, for official offenses, and should the circumstances so warrant to impeach them before the Senate; and further to act as a grand jury to decide whether there is or is not good ground for proceeding against any official enjoying constitutional privileges, whenever accused of offenses of the common order.

VI. To exercise such other powers as may be expressly vested in it by this Constitution.

Art. 75. *The House of Representatives, in passing the budget, shall not fail to assign a definite compensation to every office created by law, and if for any reason such compensation shall not be assigned, the amount fixed in the preceding budget or in the law creating the office shall be presumed to be assigned.*

Art. 76.

I. [Identical]

II. [Identical]

B. The Senate shall have the following exclusive powers:

I. To approve the treaties and diplomatic conventions concluded by the Executive with foreign powers.

II. To confirm the nominations made by the President of diplomatic ministers or agents, consuls general, higher officials of the treasury, colonels and

1857

other superior officers of the army and navy, in the manner and form by law provided.

III. To authorize the Executive to allow national troops to go beyond the limits of the Republic, or to permit foreign troops to pass through the national territory, and to consent to the presence of fleets of another nation for more than one month in Mexican waters.

IV. To consent to the Executive disposing of the national guard outside of the limits of its respective States or Territories, and to fix the amount of the force to be used.

V. To declare, when all the constitutional powers of any State have disappeared, that the occasion has arisen to give the said State a provisional governor, who shall order elections to be held according to the constitution and laws of the State. The appointment of such governor shall be made by the Federal Executive with the approval of the Senate, or in its recess, of the permanent committee. The said functionary shall not be chosen constitutional governor in the elections to be held under the call which he shall issue.

1917

III. [Identical]

IV. [Identical]

V. To declare, when all the constitutional powers of any State have disappeared, that the occasion has arisen to give to the said State a provisional governor, who shall call for elections to be held according to the constitution and laws of the said State. The appointment of such a governor shall be made *by the Senate with the approval of two-thirds of its members present or during recess by the Permanent Committee by the same two-thirds majority, from among three names submitted by the President.* The official thus selected shall not be chosen constitutional governor in the elections to be held under the call which he shall issue. *This provision shall govern whenever the State Constitutions do not provide for the contingency.*

VI. *To sit as a Grand Jury to take cognizance of such official offenses of functionaries as are*

1857

VI. To adjust all political questions arising between the powers of a State whenever one of them shall appeal to the Senate or whenever by virtue of such differences a clash of arms has arisen to interrupt the constitutional order. In this event the Senate shall decide in accordance with the Federal Constitution and the Constitution of the State involved.

The exercise of this power and of the foregoing shall be regulated by law.

VII. To sit as a court of impeachment, under article 105 of the Constitution. [As amended November 13, 1874.]

C. Each House may, without the intervention of the other:

I. Pass resolutions upon matters exclusively relating to its own interior government.

II. Communicate with the other House, and with the Executive through committees appointed from among its members.

III. Appoint the employees in the office of its secretary, and make all rules and regulations for the said office.

IV. Issue a call for extraordinary elections to fill any vacancies which may occur in its membership. [As amended November 13, 1874.]

1917

expressly prescribed by this Constitution.

VII. To exercise such other powers as may be expressly vested in it by this Constitution.

VIII. [Identical]

Art. 77. [Identical]

1857

PARAGRAPH IV

Of the Permanent Committee

Art. 73. During the recesses of the Congress there shall be a Permanent Committee consisting of twenty-nine members, fifteen of whom shall be Representatives and fourteen Senators, appointed by the respective Houses on the eve of the day of adjournment. [*As amended November 13, 1874.*]

Art. 74. In addition to the powers vested in it by this Constitution, the Permanent Committee shall have the following powers:

I. To give its consent to the use of the national guard as provided in Article 72, Clause XX. [*As amended May 6, 1904.*]

II. To decide upon the call for extraordinary sessions of the Congress or of a single House thereof, either on its own initiative, in which event it shall hear the opinion of the Executive, or on the proposal of the Executive; in either event, the

1917

SECTION IV

Of the Permanent Committee

Art. 78. During the recess of the Congress there shall be a Permanent Committee consisting of twenty-nine members, fifteen of whom shall be Representatives and fourteen Senators, appointed by the respective Houses on the eve of the day of adjournment.

Art. 79. In addition to the powers expressly vested in it by this Constitution, the Permanent Committee shall have the following powers:

I. To give its consent to the use of the national guard as provided in Article 76, Clause IV.

II. To administer the oath of office, should the occasion arise, to the President, to the Justices of the Supreme Court, to the Superior Judges of the Federal District and Territories, on such occasions as the latter officials may happen to be in the City of Mexico.

[Compare Art. 74, IV of 1857.]

III. To report on all pending matters, so that they may be considered in the next session.

[Compare Art. 74, V of 1857.]

IV. To call extraordinary sessions in the case of official offenses or offenses of the common order committed by Secretaries of Executive Departments or Justices of the Supreme Court, and official offenses committed by State Governors, provided the

1857

two-thirds' vote of the members present shall be necessary. The call shall stipulate the object or objects of the extraordinary session. [*As amended November 13, 1874.*]

III. To confirm the nominations referred to in article 85, Clause III.

IV. To administer the oath of office to the President of the Republic, and to the justices of the supreme court, in the cases provided for by this Constitution.

V. To report upon all pending matters, in order that the next legislature may immediately consider them.

SECTION II

Of the Executive Power

Art. 75. The exercise of the supreme executive power of the Union is vested in a single individual, who shall be called "President of the United States of Mexico."

Art. 76. The election of President shall be direct, in accordance with the terms of the electoral law. [*As amended April 26, 1912.*]

Art. 77. No person shall be eligible to the office of President who is not a Mexican citizen by birth, in the exercise of his rights, over thirty-five years old at the time of the election, not belonging to the ecclesiastical state, and a resident of the country at the time in which the election is held.

1917

case shall have been already instituted by the Committee of the Grand Jury, in which event no other business of the Congress shall be considered, nor shall the sessions be prolonged beyond the time necessary for a decision.

CHAPTER III

Of the Executive Power

Art. 80. [Identical]

Art. 81. [Identical]

Art. 82. The President of the Republic shall have the following qualifications:

I. He shall be a Mexican citizen by birth, in the full enjoyment of his rights, and he must be the son of Mexican parents by birth.

II. He shall be over thirty-five years of age at the time of election.

1857

Art. 78. The President and Vice-President shall enter upon their duties on the first day of December, shall serve six years, and shall never be reelected.

The President shall never be elected Vice-President, nor the Vice-President be elected President for the ensuing term.

Nor may the Secretary of the Executive Department charged with the executive power at the time of the elections be elected President or Vice-President. [As amended November 27, 1911.]

Art. 79. The electors who choose the President shall likewise, on the same day and in the same manner, choose a Vice-President, who shall have the same qualifications as by Article 77 are required for the office of President.

The Vice-President shall be ex officio President of the Sen-

1917

III. He shall have resided in the country during the entire year prior to the election.

IV. He shall not belong to the ecclesiastical state nor be a minister of any religious creed.

V. In the event of belonging to the army, he shall have retired from active service 90 days immediately prior to the election.

VI. He shall not be a secretary or assistant secretary of any executive department, unless he shall have resigned from office 90 days prior to the election.

VII. He shall not have taken part, directly or indirectly, in any uprising, riot or military coup.

Art. 83. The President shall enter upon the duties of his office on the first day of December, shall serve four years and shall never be reelected.

The citizen who shall replace the constitutional President in the event of his permanent disability shall not be elected President for the ensuing term.

Nor shall the person designated as Acting President during the temporary disabilities of the constitutional President be reelected President for the ensuing term.

1857

ate; he shall have no voice and shall only be entitled to a vote in the event of a tie. The Vice President may, however, fill any appointive office of the Executive; in the event of disability caused by such appointment or by other causes, he shall be replaced as President of the Senate, as provided in the respective law. [As amended May 6, 1904.]

Art. 80. Whenever the President shall fail to present himself on the day set by law to assume office, or whenever a permanent disability occur during his term of office or he be granted permission to leave his office, the **Vice-President** shall assume the exercise of the Executive Power by operation of law, without the need of a new oath of office.

If the disability of the President be permanent the **Vice-President** shall complete the term for which he was elected; in all other cases, he shall serve until the President resume office. [As amended May 6, 1904.]

1917

Art. 84. In the event of the permanent disability of the President of the Republic, if this shall occur within the first two years of the respective term, the Congress, if in session, shall forthwith act as an electoral college, and with the attendance of at least two-thirds of its total membership shall choose a President by secret ballot and by a majority vote; and the same Congress shall issue the call for Presidential elections and shall endeavor to have the date set for this event as far as possible coincide with the date of the next election of Representatives and Senators to Congress.

Should the disability of the president occur while Congress is in recess, the Permanent Committee shall forthwith designate a President ad interim who shall call Congress together in extraordinary session, in order that it may in turn issue the call for Presidential elections in the manner provided in the foregoing paragraph.

Should the disability of the President occur in the last two years of the respective term, the Congress, if in session, shall

1857

Art. 81. If neither the President Elect nor the **Vice-President Elect** shall present himself at the beginning of any constitutional term, or the election not have been made and the result made known by the first of December, the outgoing President shall nevertheless vacate office and the Secretary of Foreign Affairs shall forthwith assume the executive power; in the absence or disability of the secretary of Foreign Affairs, one of the secretaries of the executive departments, in the order established by law, shall forthwith assume the executive power.

The same procedure shall be observed when, in the event of the permanent or temporary disability of the President, the Vice President shall not present

1917

choose the substitute to conclude the period of the presidential term; if Congress shall not be in session the Permanent Committee shall choose a President ad interim and shall summon Congress in extraordinary session, in order that it may act as an electoral college and proceed to the election of the substitute President.

The President ad interim may be chosen by Congress as substitute President.

The citizen designated as President ad interim for the purpose of calling elections, in the event of the disability of the President within the two first years of the respective term, shall not be chosen in the elections held to fill such vacancy and for which he was designated.

Art. 85. If the President-Elect shall fail to present himself at the beginning of any constitutional term, or the election not have been held and the result made known by the first of December, the outgoing President shall nevertheless vacate office and the President ad interim chosen by the Congress, or in its recess by the Permanent Committee, shall forthwith assume the executive power. All action taken hereunder shall be governed by the provisions of the foregoing article.

In case of a temporary disability of the President, the Congress, or the Permanent Committee if the Congress shall not be in session, shall designate an Acting President during such disability. If a temporary disability shall

1857

himself, when the latter shall be granted leave to resign, if he shall be in office, and when the permanent disability of both functionaries shall occur during the term of office.

In the event of the permanent disability of the President and Vice President, the Congress, or in its recess the Permanent Committee, shall immediately issue a call for extraordinary elections.

Should the disability of both functionaries occur in the last year of the constitutional term, no call shall be issued, but the secretary who shall assume the executive power shall continue charged with the same until the new President, or the person to act in his stead according to the preceding provisions, shall take office.

The citizens chosen in the extraordinary elections shall assume office so soon as the corresponding declaration be made, and they shall continue in office for the balance of the constitutional term. Whenever a secretary of an executive department shall be called upon to assume the executive power, he shall discharge this office without need of an affirmation, until such time as he is able to make it. *[As amended, May 6, 1904.]*

Art. 82. Neither the President nor Vice-President shall resign office except for grave cause, upon which the Congress shall pass, to which body the resignations shall be presented. *[As amended, May 6, 1904.]*

1917

become permanent, the action prescribed in the preceding article shall be taken.

In the event of a leave of absence granted to the President of the Republic the person acting in his stead shall not be disqualified from being elected in the ensuing period, provided he shall not have been in office during the holding of elections.

Art. 86. The President shall not resign office except for grave cause, upon which the Congress shall pass, to which body the resignation shall be tendered.

1857

Art. 83. The President, before entering upon the discharge of the duties of his office, shall make the following affirmation before the Congress, or in its recess before the Permanent Committee:

"I do solemnly affirm that I will defend and enforce the Constitution of the United States of Mexico and the laws arising thereunder and that I will faithfully and conscientiously perform the duties of President of the United States of Mexico, to which I have been chosen by the people, having ever in mind the welfare and prosperity of the Nation."

The Vice-President shall in the same session make an affirmation in similar language to discharge the duties of Vice President, or, should the occasion arise, those of President; if he shall be unable to make the affirmation at the same session as the President, he shall do so at another session. [*As amended, May 6, 1904.*]

Art. 84. The President and the Vice-President shall not absent themselves from the national territory, without the permission of the House of Representatives. [*As amended, May 6, 1904.*]

Art. 85. The President shall have the following powers and duties:

I. To promulgate and execute the laws enacted by the Congress, providing, within the executive sphere, for their faithful observance.

1917

Art. 87. The President, before entering upon the discharge of the duties of his office, shall make the following affirmation before the Congress, or in its recess before the Permanent Committee:

"I do solemnly affirm that I will defend and enforce the Constitution of the United States of Mexico and the laws arising thereunder and that I will faithfully and conscientiously perform the duties of President of the United States of Mexico, to which I have been chosen by the people, having ever in mind the welfare and prosperity of the Nation; if I shall fail to do so, may the Nation call me to account."

Art. 88. The President shall not absent himself from the national territory without the permission of the Congress.

Art. 89.

I. [Identical]

1857

II. To appoint and remove at will the secretaries of executive departments, to remove the diplomatic agents and superior officers of the treasury, and to appoint and remove at will the other federal officials whose appointment or removal is not otherwise provided for in the Constitution or the laws.

III. To appoint, with the approval of the Congress, and, in its recess, of the Permanent Committee, ministers, diplomatic agents, and consuls general.

IV. To appoint, with the approval of Congress, colonels and other superior officers of the national army and navy, and superior officials of the treasury.

V. To appoint all other officers of the national army and navy, as by law provided.

VI. To dispose of the permanent land and sea forces for the domestic safety and foreign defense of the Union.

VII. To dispose of the national guard for the same purposes, as provided by Article 72, Clause XX.

VIII. To declare war in the name of the United States of Mexico, after the passage of the corresponding resolution by the Congress of the Union.

IX. To grant letters of marque, upon the terms and conditions fixed by the Congress.

X. To conduct diplomatic negotiations and to make treaties

1917

II. To appoint and remove at will the Secretaries of Executive Departments, *the Attorney General of the Republic, the Governor of the Federal District, the Governors of Territories, the Attorney General of the Federal District and Territories*; and to appoint and remove at will all other Federal employees whose appointment or removal is not otherwise provided for by law or in this Constitution.

III. To appoint, with the approval of the *Senate*, all ministers, diplomatic agents and consuls general.

IV. To appoint, with the approval of the *Senate*, the colonels and other superior officers of the army and navy and the superior officials of the treasury.

V. [Identical]

VI. [Identical]

VII. To dispose of the national guard for the same purposes, as provided by Article 76, Clause IV.

VIII. [Identical]

IX. [Identical]

X. [Identical]

1857

with foreign powers, submitting them for ratification to the Congress.

XI. To receive ministers and other envoys from foreign powers.

XII. To call, upon resolution of the Permanent Committee, an extra session of the Congress.

XIII. To afford the judiciary the assistance necessary for the expeditious exercise of its functions.

XIV. To open all kinds of ports, establish maritime and frontier custom houses and designate their location.

XV. To grant, according to law, pardons to criminals sentenced for offenses within the jurisdiction of the Federal tribunals.

XVI. To grant exclusive privileges for a limited time, and according to the respective laws, to discoverers, inventors or improvers in any branch of industry. [As amended, June 2, 1882.]

Art. 86. For the transaction of administrative matters of the

1917

XI. To call Congress, or either of the Houses, in extraordinary session, whenever in his judgment it may be advisable.

XII. [Identical]

XIII. [Identical]

XIV. To grant, according to law, pardons to criminals sentenced for offenses within the jurisdiction of the Federal tribunals, and to all persons sentenced for offenses of the common order in the Federal District and Territories.

XV. [Identical]

XVI. Whenever the Senate shall not be in session the President may temporarily make the nominations enumerated in Clauses III and IV hereof, but these nominations shall be submitted to the Senate so soon as it reconvenes.

XVII. To exercise such other rights and duties as are expressly conferred upon him by this Constitution.

Art. 90. [Identical]

1857

Federal Government there shall be the number of Secretaries of Executive Departments which the Congress may by law establish, which law shall likewise assign among the various departments the several matters with which each shall be charged.

Art. 87. No person shall be appointed secretary of an executive department who is not a Mexican citizen by birth, in the enjoyment of his rights, and twenty-five years old.

Art. 88. All regulations, decrees, and orders of the President shall be signed by the secretary of the executive department to which the matter pertains. They shall not be binding without this requisite.

Art. 89. The Secretaries of Executive Departments shall, so soon as the sessions of the first period are opened, report to the Congress as to the state of their respective departments.

1917

Art. 91. No person shall be appointed Secretary of an Executive Department who is not a Mexican citizen by birth, in the enjoyment of his rights and who has not attained the age of *thirty* years.

Art. 92. All regulations, decrees and orders of the President shall be signed by the Secretary of the Executive Department to which the matter pertains. They shall not be binding without this requisite. *All regulations, decrees, and orders of the President touching the government of the Federal District and the administrative departments shall be transmitted directly by the President to the Governor of the District and to the chief of the respective department.*

Art. 93. The Secretaries of Executive Departments shall on the opening of *each regular session* report to the Congress as to the state of their respective Departments. *Either House may summon a Secretary of an Executive Department to inform it, whenever a bill or other matter pertaining to his department is under discussion or consideration.*

1857

SECTION III

Of the Judicial Power

Art. 90. The judicial power of the Federation is vested in a supreme court and in the district and circuit courts.

Art. 91. The supreme court shall consist of fifteen justices, and shall sit in banc or in sections, as provided by law. [As amended, May 22, 1900.]

Art. 92. The justices of the supreme court shall serve for six years, and their election shall be indirect in the first degree, in the manner established by the electoral law.

Art. 93. No person shall be eligible to the position of justice of the supreme court who, in the judgment of the electors, is not

1917

CHAPTER IV

Of the Judicial Power

Art. 94. The judicial power of the Federation is vested in a Supreme Court and in Circuit and District Courts, whose number and powers shall be fixed by law. The Supreme Court of Justice shall consist of eleven members; its sittings shall be in banc and its hearings shall be public, except in the cases where public interest or morality shall otherwise require. It shall meet at such times and under such conditions as by law prescribed. No sittings of the court shall be held without the attendance of at least two-thirds of its total membership, and all decisions rendered shall be by a majority vote.

The Justices of the Supreme Court chosen to this office in the forthcoming elections shall serve two years; those elected at the conclusion of this first term shall serve four years, and from and after the year 1923 the Justices of the Supreme Court, the Circuit and District judges may only be removed for malfeasance and after impeachment proceedings, unless the Circuit and District Judges be promoted to the next higher grade.

The same provision shall govern, in so far as it be applicable to the terms of two and four years, respectively, to which this article refers.

Art. 95. The Justices of the Supreme Court shall have the following qualifications:

I. They shall be Mexican

1857

learned in the science of law, thirty-five years of age, and a Mexican citizen by birth, in the exercise of his rights.

1917

citizens by birth, in the full enjoyment of their civil and political rights.

II. They shall be over thirty-five years of age at the time of election.

III. They shall be graduates in law of some institution or corporation authorized by law to confer such degrees.

IV. They shall be of good repute and not have been convicted of any offense punishable with more than one year's imprisonment; but conviction of larceny, deceit, forgery, embezzlement or any other offense seriously impairing their good name in the public mind shall disqualify them for office, whatever may have been the penalty imposed.

V. They shall have resided in the country for the last five years, except in the case of absence due to public service abroad for a period not exceeding six months.

Art. 96. The members of the Supreme Court of Justice shall be chosen by the Congress, acting as an electoral college; the presence of at least two-thirds of the total number of Representatives and Senators shall be necessary for such action. The election shall be by secret ballot and by a majority vote, and shall be held as among the candidates previously proposed, one being nominated by each State legislature, as provided in the respective State laws.

Should no candidate receive a majority on the first ballot, the balloting shall be repeated between the two candidates receiving the highest number of votes.

1857

Art. 94. The justices of the supreme court shall, on entering upon the exercise of their functions, take an oath before Congress, and, in its recesses, before the permanent committee, in the following form: "Do you swear to perform loyally and patriotically the office of justice of the supreme court of justice, to which you have been chosen by the people, in conformity with the Constitution, having ever in mind the welfare and prosperity of the Union?"

Art. 95. The resignation of a justice of the supreme court shall only be accepted for grave cause, approved by the Congress, to whom the resignation shall be tendered. In the recesses of the Congress the power to act on this matter belongs to the Permanent Committee.

Art. 96. The law shall establish and organize the circuit and district courts, and the office of the Public Attorney of the Federation. The officers of the Public Attorney and the Attorney General of the Republic who shall preside over the same shall be appointed by the Executive. *[As amended May 22, 1900.]*

1917

[Compare the last two paragraphs of Art. 97 of 1917.]

[Identical with Art. 199 of 1917]

Art. 97. All Circuit and District Judges shall be appointed by the Supreme Court of Justice; they shall have such qualifications as by law required, shall serve four years and shall not be removed except by impeachment proceedings or for incapacity to discharge their duties, in accordance with the law.

The Supreme Court of Justice may remove the District Judges from one District to another, or it may fix their seats in another locality, as it may deem most advantageous to the public business. A similar procedure shall

1857

1917

be observed in the case of Circuit Judges.

The Supreme Court of Justice may likewise appoint auxiliary Circuit and District Judges to assist in the labors of such courts as have an excessive amount of business, in order that the administration of justice may be speedy; it shall also name one or more of its members or some district or circuit judge or shall designate one or more special commissioners, whenever it shall deem it advisable or on the request of the President or of either House or of any State Governor, solely for the purpose of inquiring into the behavior of any judge or federal justice or into any fact or facts which amount to a violation of any individual rights or to the subversion of the popular will or any other offense punishable by Federal statute.

The Circuit and District Courts shall be assigned among the several Justices of the Supreme Court who shall visit them periodically, shall observe the conduct of their judges, listen to any complaint presented against them and perform all such other acts as the law may require. The Supreme Court shall appoint and remove at will its clerk of the court and other employees on the roster established by law. The Circuit and District Judges shall likewise appoint and remove at will their respective clerks and employees.

The Supreme Court shall choose each year one of its mem-

1857

1917

bers to act as Chief Justice, with the right of re-election.

Each Justice of the Supreme Court on assuming office shall make an affirmation before Congress, or if this is in recess, before the Permanent Committee, as follows:

The Presiding Officer shall say: "Do you promise to perform faithfully and conscientiously the duties of Justice of the Supreme Court with which you have been charged, and to defend and enforce the Constitution of the United States of Mexico and the laws arising thereunder, having ever in mind the welfare and prosperity of the Nation?" To which the Justice shall reply, "I do." On which the Presiding Officer shall answer: "If you fail to do so, may the Nation call you to account."

The Circuit and District Judges shall make the affirmation of office before the Supreme Court or before such other authority as the law may determine.

Art. 98. *No temporary disability of a Justice of the Supreme Court not exceeding one month shall be filled, provided there be otherwise a quorum. In the absence of a quorum the Congress, or in its recess the Permanent Committee, shall name a substitute selected from among the candidates submitted by the States for the election of the justice in question and not chosen, to serve during such disability. If the disability does not exceed two months,*

1857

1917

the Congress, or during its recess the Permanent Committee, shall choose at will a temporary justice.

In the event of the death, resignation or disqualification of any justice of the supreme court, a new election shall be held by the Congress to fill this vacancy as provided in Article 96.

If the Congress shall not be in session, the Permanent Committee shall make a temporary appointment until such time as the Congress shall convene and proceed to the corresponding election.

Art. 99. [Identical with Art. 95 of 1857.]

Art. 100. The Supreme Court shall grant all leaves of absence of its members, when they do not exceed one month; such as do exceed this period shall be granted by the House of Representatives, or during its recess by the Permanent Committee.

Art. 101. No justice of the supreme court, circuit or district judge, nor clerk of any of these courts shall under any circumstances accept any State, Federal or private commission or office, excepting honorary titles from scientific, literary or charitable associations. The violation of this provision shall work a forfeiture of office.

Art. 102. The office of the Public Attorney shall be organized in accordance with the law, and its officers shall be appointed and removed at will by

1857

1917

the Executive. They shall be under the direction of an Attorney General who shall possess the same qualifications as are required for the office of Justice of the Supreme Court.

The Public Attorneys shall be charged with the judicial prosecution of all Federal offenses; they shall accordingly sue out all orders of arrest, assemble and offer all evidence as to the responsibility of the accused, see that the trials are conducted in due order so that the administration of justice may be speedy, pray the imposition of sentence, and in general take part in all matters required by law.

The Attorney General of the Republic shall personally intervene in matters to which the Federal Government is a party, in cases affecting ministers, diplomatic agents and consuls general, and in all controversies between two or more States of the Union, between the Federal Government and a State or between the several powers of a State. The Attorney General may either personally or through one of the Public Attorneys take part in all other cases in which the Public Attorneys are called upon to act.

The Attorney General shall be the legal advisor of the Government, and both he and the Public Attorneys under his orders shall faithfully obey the law and shall be liable for all breaches or for any violations which they may incur in the discharge of their duties.

Art. 103. [Identical with Art. 101 of 1857.]

1857

Art. 97. The Federal tribunals shall take cognizance of:

I. All controversies arising out of the application and enforcement of the federal laws, excepting when the application only affects private rights when the regular local courts of the States, The Federal District and Territory of Lower California shall assume jurisdiction, respectively. *[As amended May 29, 1884.]*

II. All cases pertaining to admiralty law.

III. All cases to which the Federation may be a party.

IV. All cases which may arise between two or more States.

V. All cases arising between a State and one or more citizens of another State.

VI. All civil or criminal cases that may arise out of treaties with foreign powers.

VII. All cases concerning diplomatic agents and consuls.

Art. 98. The supreme court shall have original jurisdiction of controversies which may arise between one State and another, and of those to which the Federal Government may be a party.

1917

Art. 104. The Federal Tribunals shall have jurisdiction over:

I. All controversies of a civil or criminal nature arising out of the application and enforcement of the Federal laws, or out of treaties concluded with foreign powers. Whenever such controversies affect only private rights, the regular local courts of the States, the Federal District and Territories shall, *at the election of the plaintiff*, assume jurisdiction. *Appeal may be had from all judgments of first instance to the next higher tribunal of the same court in which the case was first heard. Appeal may be taken from sentences of second instance to the Supreme Court of Justice, which appeal shall be prepared, submitted and prosecuted, in accordance with the procedure provided by law.*

II. *[Identical]*

III. *[Identical]*

IV. All cases arising between two or more States, or between any State and the Federal Government, as well as those arising between the courts of the Federal District and those of the Federal Government or of a State.

V. *[Identical]*

VI. *[Identical with VII.]*

Art. 105. The Supreme Court of Justice shall have exclusive jurisdiction in all controversies arising between two or more States, between the powers of government of any State as to the constitutionality of their acts, or between one or more

1857

Art. 99. The supreme court shall also have power to settle questions of jurisdiction between Federal tribunals, between these tribunals, and those of the States, or between those of one State and those of another.

Art. 100. In all the other cases mentioned in Article 97, the supreme court shall be either a court of appeals, or a court of last resort, as may be defined by the law regulating the jurisdiction of the circuit and district courts.

Art. 101. The Federal tribunals shall take cognizance of:

I. All controversies arising out of laws or acts of the authorities which shall infringe any personal guarantees.

II. All controversies arising out of laws or acts of the federal authorities which limit or encroach upon the sovereignty of the States.

III. All controversies arising out of laws or acts of the State authorities which invade the sphere of the Federal authorities.

Art. 102. All controversies mentioned in Article 103 shall be prosecuted by the injured party in accordance with the judicial forms and procedure which the law shall establish.

The judgment shall always be so drawn as to affect exclusively

1917

States and the Federal Government, and in all cases to which the Federal Government may be a party.

Art. 106. The Supreme Court of Justice shall likewise have *exclusive* jurisdiction to determine all questions of jurisdiction between the Federal tribunals, between these and those of the States, or between those of one State and those of another.

[Identical with Art. 103 of 1917.]

Art. 107. All controversies mentioned in Article 103 shall be prosecuted by the injured party in accordance with the judicial forms and procedure which the law shall establish, subject to the following conditions:

1857

private individuals, and shall confine itself to affording them redress in the special case to which the complaint refers; but it shall make no general statement as to the law or the act that may have formed the basis for the complaint. When the controversy arises through the violation of personal guarantees in a civil suit, recourse may be had to the Federal Courts, only after the said civil suit has duly terminated with a decision which will permit no further legal recourse operating to vacate the said decision. [As amended November 12, 1908.]

1917

I. The judgment shall always be so drawn as to affect exclusively private individuals, and shall confine itself to affording them redress in the special case to which the complaint refers; but it shall make no general statement as to the law or the act that may have formed the basis for the complaint.

II. *In civil or penal suits, excepting those mentioned in Clause IX hereof, the writ of "amparo" shall issue only against final judgments when no other ordinary recourse is available by which these judgments may be modified or amended, if the violation of the law shall have occurred in the judgment, or if, although committed during the course of the trial, objection was duly noted and protest entered against the denial of reparation, and provided further that if committed in first instance it shall have been invoked in second instance as a violation of the law.*

1857

1917

Notwithstanding the foregoing provision, the supreme court may in penal cases waive any defects in the petition when there has been a manifest violation of the law which has left the petitioner without recourse, or when he has been tried by a law not strictly applicable to the case, provided failure to take advantage of this violation has been merely an oversight.

III. In civil or penal suits the writ of "amparo" shall issue only if substantial portions of the rules of procedure have been violated, and provided further that the said violation shall deprive the petitioner of means of defense.

IV. In addition to the case mentioned in the foregoing paragraph, the writ of "amparo" shall issue only on a final judgment in a civil suit,—provided the requirements set forth in Clause II hereof have been complied with,—when the judgment shall be contrary to the letter of the law applicable to the case or contrary to its legal interpretation, when it includes persons, actions, defenses, or things which have not been the object of the suit, or finally when all these have not been included either through omission or express refusal.

When the writ of "amparo" is sought against mesne judgments, in accordance with the provisions of the foregoing clause, these rules shall be observed, as far as applicable.

V. In penal suits, the authorities responsible for the violation shall stay the execution of final judgment against which the writ

1857

1917

of "amparo" has been sought; for this purpose the petitioner shall, within the period set by law, give notice, under oath, to the said authorities of the interposition of this recourse, accompanying it with two copies of the petition, one of which shall be delivered to the opposing party and the other filed.

VI. The execution of a final judgment in civil suits shall only be stayed when the petitioner shall give bond to cover damages occasioned thereby, unless the other party shall give a counter bond (1) to guarantee that the normal conditions and relations previously existing be restored, and (2) to pay the corresponding damages, in the event of the granting of the "amparo." In such event the interposition of the recourse of "amparo" shall be communicated as provided in the foregoing clause.

VII. If a writ of "amparo" be sought against a final judgment, a certified copy of such portions of the record as the petitioner may desire shall be requested from the authority responsible for the violation; to this there shall be added such portions as the other party may desire and a clear and succinct statement by the said authority of the justification of the act protested; note shall be made of this on the record.

VIII. When a writ of "amparo" is sought against a final judgment, the petition shall be brought before the Supreme Court; this petition, together with the copy required by Clause VII, shall be either presented to the Supreme

1857

1917

Court or sent through the authority responsible for the violation or through the District Court of the corresponding State. The Supreme Court shall render judgment without any other formality or procedure than the petition, the document presented by the other party and that of the Attorney General or the Public Attorney he may name in his stead, and shall comprise no other legal question than that contained in the complaint.

IX. When the acts of an authority other than the judicial are involved or the acts of the judiciary exercised outside of the suit or after the termination thereof, or acts committed during the suit whose execution is of impossible reparation, or which affect persons not parties to the suit, the writ of "amparo" shall be sought before the District Court within whose jurisdiction is located the place where the act protested was committed or attempted; the procedure in this case shall be confined to the report of the authority and to a hearing, the call for which shall be issued in the same order of the court as that calling for the report. This hearing shall be held at as early a date as possible, the testimony of both parties offered, arguments heard which shall not exceed one hour for each side, and finally the judgment which shall be pronounced at the same hearing. The judgment of the District Court shall be final, if the interested parties do not appeal to the Supreme Court within the period set by law and

1857

1917

in the manner prescribed by Clause VIII.

In case of a violation of the guarantees of Articles 16, 19 and 20, recourse shall be had through the appellate court of the court committing the breach or to the corresponding District Court. An appeal against the decision of any of these courts may be taken to the Supreme Court.

If the district judge shall not reside in the same locality as the official guilty of the violation, the judge before whom the petition of "amparo" shall be submitted shall be determined by law; this judge shall be authorized to suspend temporarily the execution of the act protested, in accordance with the terms established by law.

X. Any official failing to suspend the execution of the act protested, when in duty bound to do so, or when he admits an insufficient or improper bond, shall be turned over to the proper authorities; the civil and penal liability of the official shall in these cases be a joint liability with the person offering the bond and his surety.

XI. If after the granting of an "amparo," the guilty official shall persist in the act or acts against which the petition of "amparo" was filed, or shall seek to render of no effect the judgment of the Federal authority, he shall be forthwith removed from office and turned over for trial to the corresponding district court.

XII. Wardens and jailers who fail to receive a duly certified copy of the formal order of commitment within the seventy-two hours

1857

1917

granted by Article 19, reckoned from the time the accused is placed at the disposal of the court, shall bring this fact to the attention of the court, immediately upon expiration of this period; and if the proper order be not received within the next three hours the accused shall be set at liberty.

Any official who shall violate this provision and the article referred to in the foregoing paragraph shall be immediately turned over to the proper authorities. Any official or agent thereof who, after an arrest has been made, shall fail to place the accused at the disposition of the court within the next twenty-four hours shall himself be turned over to the proper authority.

If the detention be effected outside the locality in which the court is situated, there shall be added to the period mentioned in the preceding sentence the time necessary to travel from the said locality to that where the detention took place.

TITLE IV

*Of the Responsibility of
Officials*

Art. 103. Senators, representatives, justices of the supreme court, and secretaries of executive departments shall be liable for the common offenses committed by them during their term of office, and for their crimes, misdemeanors, or omissions in the exercise of their functions. The governors of the States shall also be responsible for the violation of the Federal Constitu-

TITLE IV

*Of the Responsibility of
Officials*

Art. 108. Senators and Representatives of Congress, Justices of the Supreme Court, Secretaries of Executive Departments and the Attorney General of the Republic shall be liable for all common offenses committed during their term of office, as well as for all official offenses or acts of commission or omission in which they may incur in the discharge of their duties.

1857

tion and laws. The President of the Republic shall be likewise responsible; but during his term he can be charged only with treason **express violation of the Constitution, attacks on electoral liberty**, and grave common offenses. [*As amended May 6, 1904.*]

No constitutional privilege shall be extended to any high Federal functionary when tried for official offenses, misdemeanors, or omissions committed by him in the discharge of any public function or commission, during the time in which, according to law, the privilege is enjoyed. This provision shall be applicable to cases of common offenses committed under the same circumstances. In order that the proceedings may be instituted when the functionary returns to the exercise of his own functions, the rules set forth in Article 104 of the Constitution shall be observed.

Art. 104. If the offense belongs to the common order the House of Representatives, acting as a grand jury, shall determine by a majority vote whether there is or is not any ground for proceeding against the accused.

If the finding be favorable to the accused, no further action shall be taken.

If the finding be adverse, the accused shall *ipso facto* be removed from office and be placed at the disposition of the ordinary courts of justice. [*As amended November 13, 1874.*]

1917

Governors of States and *members of State Legislatures* shall be liable for violation of the Constitution and the Federal Laws.

The President of the Republic may only be impeached during his term of office for high treason and common offenses of a serious character.

[Identical with Art. 110 of 1917.]

Art. 109. If the offense belongs to the common order the House of Representatives, acting as a grand jury, shall determine by a majority vote of *its total membership* whether there is or is not any ground for proceeding against the accused.

If the finding be favorable to the accused, no further action shall be taken; *but such finding shall not be a bar to the prosecution of the charge so soon as the constitutional privilege shall cease, since the finding of the House does not in any way determine the merits of the charge.*

1857

Art. 105. In cases of impeachment the House of Representatives shall act as a grand jury and the Senate as a tribunal.

The grand jury shall decide by a majority vote if the accused is or is not to be impeached. If the decision is favorable to the accused official, the latter shall continue in the exercise of his functions. If it is adverse, the accused official shall be immediately removed from office and put at the disposal of the Senate. The Senate, acting as a tribunal, shall, upon the proper hearing of the defendant, and also of the plaintiff, if there be any, by a majority vote impose the penalty provided by law. [As amended November 13, 1874.]

1917

If the finding be adverse, the accused shall *ipso facto* be removed from office and be placed at the disposition of the ordinary courts of justice, *except in the case of the President of the Republic, who may only be impeached before the Senate, as in the case of an official offense.*

Art. 111. The Senate acting as a grand jury shall try all cases of impeachment; but it may not institute such proceedings without a previous accusation brought by the House of Representatives.

If the Senate should, after hearing the accused and conducting such proceedings as it may deem advisable, determine by a majority vote of two-thirds of its total membership that the accused is guilty, the latter shall be forthwith removed from office by virtue of such decision, or be disqualified from holding any other office for such time as the law may determine.

When the same offense is punishable with an additional penalty, the accused shall be placed at the disposition of the regular authorities who shall judge and sentence him in accordance with the law.

In all cases embraced by this article and in those included by the preceding both the decisions of the Grand Jury and the findings of the House of Representatives shall be final.

Any person shall have the right to denounce before the House of Representatives offenses of a common order or of

1857

1917

an official character committed by high Federal functionaries; and whenever the said House of Representatives shall determine that there exist good grounds for impeachment proceedings before the Senate, it shall name a committee from among its own members to sustain the charges brought.

The Congress shall as soon as possible enact a law as to the responsibility of all Federal officials and employees which shall fix as official offenses all acts, of commission or omission, which may prejudice the public interest and efficient administration, even though such acts may not heretofore have been considered offenses. These officials shall be tried by a jury in the same manner as provided for trials by jury in Article 20.

Art. 106. No pardon shall be granted the offender in cases of impeachment.

Art. 112. [Identical]

Art. 107. The responsibility for official breaches and offenses may only be enforced during such time as the functionary shall remain in office and for one year thereafter.

Art. 113. [Identical]

Art. 108. In civil cases no privilege or immunity in favor of any public functionary shall be recognized.

Art. 114. [Identical]

TITLE V

Of the States of the Federation

Art. 109. The States shall adopt for their internal government the popular, representa-

TITLE V

Of the States of the Federation

Art. 115. The States shall adopt for their internal government the popular, representa-

1857

tive, republican form of government. The term of office in the case of Governors shall not exceed six years. The prohibitions on the President, Vice President and President ad interim, referred to in Article 78, shall be applicable to State Governors and functionaries acting in their stead. [As amended November 27, 1911.]

1917

tive, republican form of government; *they shall have as the basis of their territorial division and political and administrative organization the free municipality, in accordance with the following provisions:*

I. *Each municipality shall be administered by a town council chosen by direct vote of the people, and no authority shall intervene between the municipality and the State Government.*

II. *The municipalities shall freely administer their own revenues which shall be derived from the taxes fixed by the State Legislatures which shall at all times be sufficient to meet their needs.*

III. *The municipalities shall be regarded as enjoying corporate existence for all legal purposes.*

The Federal Executive and the State Governors shall have command over all public forces of the municipalities wherein they may permanently or temporarily reside.

Constitutional State Governors shall not be re-elected, nor shall their term of office exceed four years.

The prohibitions of Article 83 are applicable to substitute or ad interim governors.

The number of Representatives in the State Legislatures shall be in proportion to the inhabitants of each State, but in no case shall the number of representatives in any State Legislature be less than fifteen.

Each electoral district of the States shall choose a Representa-

1857

1917

Art. 110. The States shall have the power to fix among themselves, by friendly agreements, their respective boundaries; but these agreements shall not be carried into effect without the approval of the Congress.

Art. 111. No State shall—

I. Enter into alliances, treaties or coalitions with another State or with foreign powers. **Coalitions between frontier States for offensive or defensive war against savage Indians are excepted.**

II. Grant letters of marque or reprisal.

III. Coin money, issue paper money, stamps or stamped paper. [*As amended May 1, 1896.*]

IV. Levy taxes on persons or property passing through its territory. [*As amended May 1, 1896.*]

V. Prohibit or tax, directly or indirectly, the entry into its territory, or the withdrawal therefrom, of any merchandise, foreign or domestic. [*As amended May 1, 1896.*]

VI. Burden the circulation or consumption of domestic or foreign merchandise with taxes or duties to be collected by local custom houses or subject to inspection the said merchandise or require it to be accompanied

tive and an alternate to the State Legislature.

Every State Governor shall be a Mexican citizen by birth and a native thereof, or resident therein not less than five years immediately prior to the day of election.

Art. 116. [Identical]

Art. 117.

I. Enter into alliances, treaties or coalitions with another State or with foreign powers.

II. [Identical]

III. [Identical]

IV. [Identical]

V. [Identical]

VI. [Identical]

1857

1917

by documents. [*As amended May 1, 1896.*]

VII. Enact or maintain in force laws or fiscal regulations discriminating, by taxation or otherwise, between merchandise, foreign or domestic, on account of its origin, whether this discrimination be established with regard to similar local products or to similar products of foreign origin. [*As amended May 1, 1896.*]

VIII. Issue bonds of the public debt payable in foreign coin or outside the Federal territory; contract loans, directly or indirectly, with any foreign government, or assume any obligation in favor of any foreign corporation or individual, requiring the issuance of certificates or bonds payable to bearer or negotiable by endorsement. [*As amended December 18, 1901.*]

Art. 112. No State shall, without the consent of the Congress:

I. Establish tonnage dues or other port charges, or impose taxes or other duties upon imports or exports.

II. Keep at any time permanent troops or vessels of war.

III. Make war on its own behalf on any foreign power, except in cases of invasion or of such imminent peril as to admit of no delay. In such event the State shall give notice immediately to the President of the Republic.

VII. [Identical]

VIII. Issue bonds of the public debt payable in foreign coin or outside the Federal territory; contract loans, directly or indirectly, with any foreign government, or assume any obligation in favor of any foreign corporation or individual, requiring the issuance of certificates or bonds payable to bearer or negotiable by endorsement.

The Federal Congress and the State Legislatures shall forthwith enact laws against alcoholism.

Art. 118. [Identical, except that heading III is omitted.]

1857

Art. 113. Every State shall be bound to deliver without delay to the demanding authorities the fugitives from justice from other States or from foreign nations.

Art. 114. The State Governors are bound to publish and enforce the Federal laws.

Art. 115. Full faith and credit shall be given in each State of the Federation to the public acts, records and judicial proceedings of all the other States. The Congress shall by general laws prescribe the manner of proving the said acts, records and proceedings and the effect thereof.

1917

Art. 119. Every state shall be bound to deliver without delay to the demanding authorities the fugitives from justice from other States or from foreign nations.

In such cases the writ of the court granting the extradition shall operate as a sufficient warrant for the detention of the accused for one month, in the case of extradition from one State to another, and for two months in the case of international extradition.

Art. 120. [Identical]

Art. 121. Full faith and credit shall be given in each State of the Federation to the public acts, records and judicial proceedings of all the other States. The Congress shall by general laws prescribe the manner of proving the said acts, records and proceedings and the effect thereof.

I. *The laws of a State shall only be binding within its own confines, and shall therefore have no extra-territorial force.*

II. *Movable and immovable property shall be governed by the lex sitae.*

III. *Judgments of a State court as to property and property rights situated in another State shall only be binding when expressly so provided by the law of the latter State.*

Judgments relating to personal rights shall only be binding in another State provided the person shall have expressly, or impliedly

1857

Art. 116. The Powers of the Union are bound to protect the States against all invasion or external violence. In case of insurrection or internal disturbance they shall give them the same protection, provided the Legislature of the State, or the Executive thereof if the Legislature is not in session, shall so request.

1917

by reason of domicile, submitted to the jurisdiction of the court rendering such judgment, and provided further that personal service shall have been secured.

IV. All acts of civil status performed in accordance with the laws of one State shall be binding in all other States.

V. All professional licenses issued by the authorities of one State in accordance with its laws shall be valid in all other States.

Art. 122. [Identical]

TITLE VI

Of Labor and Social Welfare

Art. 123. The Congress and the State Legislatures shall make laws relative to labor with due regard for the needs of each region of the Republic, and in conformity with the following principles, and these principles and laws shall govern the labor of skilled and unskilled workmen, employees, domestic servants and artisans, and in general every contract of labor.

I. Eight hours shall be the maximum limit of a day's work.

II. The maximum limit of night work shall be seven hours. Unhealthy and dangerous occupations are forbidden to all

1857

1917

women and to children under sixteen years of age. Night work in factories is likewise forbidden to women and to children under sixteen years of age; nor shall they be employed in commercial establishments after ten o'clock at night.

III. The maximum limit of a day's work for children over twelve and under sixteen years of age shall be six hours. The work of children under twelve years of age shall not be made the subject of a contract.

IV. Every workman shall enjoy at least one day's rest for every six days' work.

V. Women shall not perform any physical work requiring considerable physical effort during the three months immediately preceding parturition; during the month following parturition they shall necessarily enjoy a period of rest and shall receive their salaries or wages in full and retain their employment and the rights they may have acquired under their contracts. During the period of lactation they shall enjoy two extraordinary daily periods of rest of one-half hour each, in order to nurse their children.

VI. The minimum wage to be received by a workman shall be that considered sufficient, according to the conditions prevailing in the respective region of the country, to satisfy the normal needs of the life of the workman, his education and his lawful pleasures, considering him as the head of a family. In all agricultural, commercial, manufacturing or mining

1857

1917

enterprises the workmen shall have the right to participate in the profits in the manner fixed in Clause IX of this article.

VII. The same compensation shall be paid for the same work, without regard to sex or nationality.

VIII. The minimum wage shall be exempt from attachment, set-off or discount.

IX. The determination of the minimum wage and of the rate of profit-sharing described in Clause VI shall be made by special commissions to be appointed in each municipality and to be subordinated to the Central Board of Conciliation to be established in each State.

X. All wages shall be paid in legal currency and shall not be paid in merchandise, orders, counters or any other representative token with which it is sought to substitute money.

XI. When owing to special circumstances it becomes necessary to increase the working hours, there shall be paid as wages for the overtime one hundred per cent more than those fixed for regular time. In no case shall the overtime exceed three hours nor continue for more than three consecutive days; and no women of whatever age nor boys under sixteen years of age may engage in overtime work.

XII. In every agricultural, industrial, mining or other class of work employers are bound to furnish their workmen comfortable and sanitary dwelling-places, for which they may charge rents not

1857

1917

exceeding one-half of one per cent per month of the assessed value of the properties.¹⁹ They shall likewise establish schools, dispensaries and other services necessary to the community. If the factories are located within inhabited places and more than one hundred persons are employed therein, the first of the above-mentioned conditions shall be complied with.

XIII. Furthermore, there shall be set aside in these labor centers, whenever their population exceeds two hundred inhabitants, a space of land not less than five thousand square meters for the establishment of public markets, and the construction of buildings designed for municipal services and places of amusement. No saloons nor gambling houses shall be permitted in such labor centers.

XIV. Employers shall be liable for labor accidents and occupational diseases arising from work; therefore, employers shall pay the proper indemnity, according to whether death or merely temporary or permanent disability has ensued, in accordance with the provisions of law. This liability shall remain in force even though the employer contract for the work through an agent.

XV. Employers shall be bound to observe in the installation of their establishments all the provisions of law regarding hygiene and sanitation and to adopt adequate measures to prevent accidents due to the use of machinery, tools and working materials, as well as to organize work in such a

¹⁹ See Art. 27, Clause VII, second paragraph of 1917.

1857

1917

manner as to assure the greatest guarantees possible for the health and lives of workmen compatible with the nature of the work, under penalties which the law shall determine.

XVI. Workmen and employers shall have the right to unite for the defense of their respective interests, by forming syndicates, unions, etc.

XVII. The law shall recognize the right of workmen and employers to strike and to lockout.

XVIII. Strikes shall be lawful when by the employment of peaceful means they shall aim to bring about a balance between the various factors of production, and to harmonize the rights of capital and labor. In the case of public services, the workmen shall be obliged to give notice ten days in advance to the Board of Conciliation and Arbitration of the date set for the suspension of work. Strikes shall only be considered unlawful when the majority of the strikers shall resort to acts of violence against persons or property, or in case of war when the strikers belong to establishments and services dependent on the government. Employees of military manufacturing establishments of the Federal Government shall not be included in the provisions of this clause, inasmuch as they are a dependency of the national army.

XIX. Lockouts shall only be lawful when the excess of production shall render it necessary to shut down in order to maintain prices reasonably above the cost of production, subject to the approval of the Board of Conciliation and Arbitration.

1857

1917

XX. Differences or disputes between capital and labor shall be submitted for settlement to a board of conciliation and arbitration to consist of an equal number of representatives of the workmen and of the employers and of one representative of the Government.

XXI. If the employer shall refuse to submit his differences to arbitration or to accept the award rendered by the Board, the labor contract shall be considered as terminated, and the employer shall be bound to indemnify the workman by the payment to him of three months' wages, in addition to the liability which he may have incurred by reason of the dispute. If the workman reject the award, the contract will be held to have terminated.

XXII. An employer who discharges a workman without proper cause or for having joined a union or syndicate or for having taken part in a lawful strike shall be bound, at the option of the workman, either to perform the contract or to indemnify him by the payment of three months' wages. He shall incur the same liability if the workman shall leave his service on account of the lack of good faith on the part of the employer or of maltreatment either as to his own person or that of his wife, parents, children or brothers or sisters. The employer cannot evade this liability when the maltreatment is inflicted by subordinates or agents acting with his consent or knowledge.

XXIII. Claims of workmen for salaries or wages accrued during the past year and other in-

1857

1917

demnity claims shall be preferred over any other claims, in cases of bankruptcy or composition.

XXIV. Debts contracted by workmen in favor of their employers or their employers' associates, subordinates or agents, may only be charged against the workmen themselves and in no case and for no reason collected from the members of his family. Nor shall such debts be paid by the taking of more than the entire wages of the workman for any one month.

XXV. No fee shall be charged for finding work for workmen by municipal offices, employment bureaus or other public or private agencies.

XXVI. Every contract of labor between a Mexican citizen and a foreign principal shall be legalized before the competent municipal authority and viséed by the consul of the nation to which the workman is undertaking to go, on the understanding that, in addition to the usual clauses, special and clear provisions shall be inserted for the payment by the foreign principal making the contract of the cost to the laborer of repatriation.

XXVII. The following stipulations shall be null and void and shall not bind the contracting parties, even though embodied in the contract:

(a) Stipulations providing for inhuman day's work on account of its notorious excessiveness, in view of the nature of the work.

(b) Stipulations providing for a wage rate which in the judgment of the Board of Conciliation and Arbitration is not remunerative.

1857

1917

(c) Stipulations providing for a term of more than one week before the payment of wages.

(d) Stipulations providing for the assigning of places of amusement, eating places, cafes, taverns, saloons or shops for the payment of wages, when employees of such establishments are not involved.

(e) Stipulations involving a direct or indirect obligation to purchase articles of consumption in specified shops or places.

(f) Stipulations permitting the retention of wages by way of fines.

(g) Stipulations constituting a waiver on the part of the workman of the indemnities to which he may become entitled by reason of labor accidents or occupational diseases, damages for breach of contract, or for discharge from work.

(h) All other stipulations implying the waiver of any right vested in the workman by labor laws.

XXVIII. The law shall decide what property constitutes the family patrimony. These goods shall be inalienable and shall not be mortgaged, nor attached, and may be bequeathed with simplified formalities in the succession proceedings.

XXIX. Institutions of popular insurance²⁰ established for old age, sickness, life, unemployment, acci-

²⁰ In the desire to adhere as closely as possible to the original, the term "popular insurance" has been used. It would seem, however, that in making use of the expression "*Seguros Populares*," it was intended to convey the full connotation of the term "Social Insurance." (See "Social Insurance," Seager, 1910.)

1857

1917

dent and others of a similar character, are considered of social utility; the Federal and State Governments shall therefore encourage the organization of institutions of this character in order to instill and inculcate popular habits of thrift.

XXX. Coöperative associations for the construction of cheap and sanitary dwelling houses for workmen shall likewise be considered of social utility whenever these properties are designed to be acquired in ownership by the workmen within specified periods.

TITLE VI

Of General Provisions

Art. 117. All powers not expressly vested by this Constitution in the Federal authorities are understood to be reserved to the States.

Art. 118. No person shall hold at the same time two Federal offices or one Federal and one State elective office; if elected to two, he shall choose between them.

Art. 119. No payment shall be made which is not included in the budget or authorized by a law subsequent to the same.

Art. 120. The President of the Republic, the Justices of the Supreme Court, Representatives and other public officials of the Federation who are chosen by popular election shall receive a compensation for their services, which shall be paid by the Federal Treasury and deter-

TITLE VII

Of General Provisions

Art. 124. [Identical]

Art. 125. [Identical]

Art. 126. [Identical]

Art. 127. The President of the Republic, the Justices of the Supreme Court, Representatives and Senators and other public officials of the Federation who are chosen by popular election shall receive a compensation for their services, which shall be paid by the Federal Treasury

1857

mined by law. This compensation may not be waived, and any law increasing or decreasing it shall have no effect during the period for which the functionary holds office.

Art. 121. Every public official, without exception, shall, before entering on the discharge of his duties, take an oath to maintain this constitution and the laws arising hereunder.

Art. 122. In time of peace no military authorities shall exercise other functions than those bearing direct relation to military discipline. No permanent military posts shall be established other than in castles, forts and arsenals depending directly upon the Federal Government, or in camps, barracks, or depots, established outside of inhabited places for the stationing of troops.

Art. 123. The Federal authorities shall have **exclusive** power to exercise, in matters of religious worship and outward ecclesiastic forms, such intervention as by law authorized.

Article 1. The church and the state are independent of each other. Congress shall not enact laws establishing or forbidding any religion.

Art. 2. Marriage is a civil contract. Marriage and all other acts relating to the civil status of persons shall appertain to the exclusive jurisdiction of the civil authorities in the manner and form provided by law,

1917

and determined by law. This compensation may not be waived, and any law increasing or decreasing it shall have no effect during the period for which the functionary holds office.

Art. 128. Every public official, without exception, shall, before entering on the discharge of his duties, make an *affirmation* to maintain this constitution and the laws arising thereunder.

Art. 129. [Identical]

Art. 130. The Federal authorities shall have power to exercise in matters of religious worship and outward ecclesiastical forms such intervention as by law authorized. All other officials shall act as auxiliaries to the Federal authorities.

The Congress shall not enact any law establishing or forbidding any religion whatsoever.

Marriage is a civil contract. Marriage and all other acts relating to the civil status of individuals shall appertain to the exclusive jurisdiction of the civil authorities in the manner and form by law provided, and they

1857

and they shall have the force and validity given to them by said laws.

Art. 3. No religious institutions shall acquire real estate or capital secured by mortgage on the same, except only in the case set forth in article 27 of the Constitution.

Art. 4. A simple promise to tell the truth and to comply with obligations entered into, shall take the place of the religious oath with all its effects and penalties. [Articles 1-4 are amendments of September 25, 1873.]

1917

shall have the force and validity given them by said laws.

A simple promise to tell the truth and to comply with obligations contracted shall subject the promisor, in the event of a breach, to the penalties established therefor by law.

The law recognizes no juridical personality in the religious institutions known as churches.

Ministers of religious creeds shall be considered as persons exercising a profession, and shall be directly subject to the laws enacted on the matter.

The State legislatures shall have the exclusive power of determining the maximum number of ministers of religious creeds, according to the needs of each locality. Only a Mexican by birth may be a minister of any religious creed in Mexico.

No ministers of religious creeds shall, either in public or private meetings, or in acts of worship or religious propaganda, criticise the fundamental laws of the country, the authorities in particular or the Government in general; they shall have no vote, nor be eligible to office, nor shall they be entitled to assemble for political purposes.

Before dedicating new temples of worship for public use, permission shall be obtained from the Department of the Interior (Gobernacion); the opinion of the Governor of the respective State shall be previously heard on the subject. Every place of worship shall have a person charged with its care and maintenance, who shall be legally responsible for

1857

1917

the faithful performance of the laws on religious observances within the said place of worship, and for all the objects used for purposes of worship.

The caretaker of each place of public worship, together with ten citizens of the place, shall promptly advise the municipal authorities as to the person charged with the care of the said place of worship. The outgoing minister shall in every instance give notice of any change, for which purpose he shall be accompanied by the incoming minister and ten other citizens of the place. The municipal authorities, under penalty of dismissal and fine, not exceeding 1,000 pesos for each breach, shall be responsible for the exact performance of this provision; they shall keep a register of the places of worship and another of the caretakers thereof, subject to the same penalty as above provided. The municipal authorities shall likewise give notice to the Department of the Interior through the State Governor, of any permission to open to the public use a new place of worship, as well as of any change in the caretakers. Gifts of personalty may be received in the interior of places of public worship.

Under no conditions shall studies carried on in institutions devoted to the professional training of ministers of religious creeds be given credit or granted any other dispensation of privilege which shall have for its purpose the accrediting of the said studies in official institutions. Any au-

1857

1917

thority violating this provision shall be punished criminally, and all such dispensation of privilege be null and void, and shall invalidate wholly and entirely the professional degree toward the obtaining of which the infraction of this provision may in any way have contributed.

No periodical publication which either by reason of its program, its title or merely by its general tendencies, is of a religious character, shall comment upon any political affairs of the nation, nor publish any information regarding the acts of the authorities of the country or of private individuals, in so far as the latter have to do with public affairs.

Every kind of political association whose name shall bear any word or any indication relating to any religious belief is hereby strictly forbidden. No assemblies of any political character shall be held within places of public worship.

No minister of any religious creed may inherit, either on his own behalf or by means of a trustee or otherwise, any real property occupied by any association of religious propaganda or religious or charitable purposes. Ministers of religious creeds are incapable legally of inheriting by will from ministers of the same religious creed or from any private individual to whom they are not related by blood within the fourth degree.

All real and personal property pertaining to the clergy or to religious institutions shall be governed, in so far as their acquisition by private parties is concerned, in

1857

Art. 124. The Federal Government shall have exclusive power to levy duties on merchandise imported, exported or passing in transit through the national territory, as well as to regulate at all times, and if necessary to forbid for the sake of public safety or for police reasons, the circulation in the interior of the Republic of all kinds of goods, regardless of their origin; but the Federal Government shall have no power to establish or decree in the Federal District and Territories the taxes and laws to which Clauses VI and VII of Article iii refer. [*As amended May 1, 1896.*]

Art. 125. All forts, barracks, warehouses, and other real property, destined by the Federal Government for public service or common use, shall be under the jurisdiction of the Federal authorities, in accordance with the law which the Congress shall issue on the subject; any of these establishments which may subsequently be acquired within the territory of any State shall likewise be subject to Federal jurisdiction, provided consent thereto shall have been obtained from the respective State legislature. [*As amended October 31, 1901.*]

Art. 126. This Constitution and the laws of the United

1917

conformity with Article 27 of this Constitution.

No trial by jury shall ever be granted for the infraction of any of the preceding provisions.

Art 131. [Identical, with exception of the references which in the 1917 text are to "Clauses VI and VII of Art. 117."]

Art. 132. [Identical]

Art. 133. [Identical]

1857

States of Mexico which shall be made in pursuance hereof and all treaties made or which shall be made under the authority of the President of the Republic, with the approval of the Congress, shall be the supreme law of the land. And the judges in every State shall be bound by this Constitution and by these laws and treaties, anything in the Constitution or laws of any State to the contrary notwithstanding.

TITLE VII

Of the Amendments to the Constitution

Art. 127. The present Constitution may be added to or amended. No amendment or addition shall become part of the Constitution until agreed to by the Congress of the Union by a two-thirds vote of the members present and approved by a majority of the State legislatures. The Congress shall count the votes of the legislatures and make the declaration that the amendments or additions have been adopted.

1917

Art. 134. Bids shall be called for on all contracts which the Government may have occasion to enter into for the execution of any public works; these bids shall be submitted under seal and shall only be opened publicly.

TITLE VIII

Of the Amendments to the Constitution

Art. 135. [Identical]

1857

1917

TITLE VIII

Of the Inviolability of the Constitution

Art. 128. This Constitution shall not lose its force and vigor, even though its observance be interrupted by rebellion. In case that through any public disturbance a Government contrary to the principles which it sanctions be established, its force shall be restored so soon as the people shall regain their liberty, and those who have participated in the Government emanating from the rebellion or have cooperated with it shall be tried in accordance with its provisions and with the laws arising under it.

TRANSITORY ARTICLE

The present Constitution shall be published at once and sworn to with the greatest solemnity throughout the whole Republic; but its provisions, except those relating to the election of the supreme powers, Federal and State, shall not go into effect until the sixteenth of September next, when the First Congress, under the Constitution, shall meet. On and after that date the President of the Republic and the justices of the supreme court, who shall continue in the exercise of their functions until their successors are constitutionally elected and enter into the discharge of their duties, shall act in strict accordance with the provisions of this Constitution.

TITLE IX

Of the Inviolability of the Constitution

Art. 136. [Identical]

TRANSITORY ARTICLES

Article 1. This Constitution shall be published at once and a solemn affirmation made to defend and enforce it throughout the Republic; but its provisions, except those relating to the election of the supreme powers, Federal and State, shall not go into effect *until the first day of May, 1917, at which time the Constitutional Congress shall be solemnly convened and the oath of office taken by the citizen chosen at the forthcoming elections to discharge the duties of President of the Republic.*

The provisions of Clause V of Article 82 shall not be applicable in the elections to be called in accordance with Article 2 of the Transitory Articles, nor shall active service in the army act as a

1857

Given at the Hall of sessions of Congress in the City of Mexico on the fifth of February, eighteen hundred and fifty-seven, the thirty-seventh of the Independence.

1917

disqualification for the office of representative or senator, provided the candidate shall not have active command of troops in the respective electoral district.

Nor shall the secretaries nor assistant secretaries of executive departments be disqualified from election to the next Federal Congress, provided they shall definitely resign from office on or before the day on which the respective call is issued.

Art. 2. The person charged with the executive power of the Nation shall immediately, upon the publication of this Constitution, call for elections to fill the Federal offices; he shall see that these elections be held so that Congress may be constituted within a reasonable time, in order that it may count the votes cast in the presidential elections and make known the name of the person who has been elected President of the Republic; this shall be done in order that the provisions of the foregoing article may be complied with.

Art. 3. The next constitutional term shall be computed, in the case of Senators and Representatives, from the first of September last, and in the case of the President of the Republic, from the first of December, 1916.

Art. 4. Senators who in the coming election shall be classified as "even" shall serve only two years, in order that the Senate may be renewed by half every two years.

Art. 5. The Congress shall in the month of May next choose the Justices of the Supreme Court in

1857

1917

order that this tribunal may be constituted on the first day of June, 1917.

In these elections, Article 96 shall not govern in so far as the candidates proposed by the State Legislatures are concerned; but those chosen shall be designated for the first term of two years prescribed by Article 94.

Art. 6. The Congress shall meet in extraordinary session on the fifteenth day of April, 1917, to act as an electoral college, for the computing of the ballots and the determination of the election of President of the Republic, at which time it shall make known the results; it shall likewise enact the organic law of the Circuit and District Courts, the organic law of the Tribunals of the Federal District and Territories, in order that the Supreme Court of Justice may immediately appoint the Inferior and Superior District and Circuit Judges; at the same session the Congress shall choose the Superior Judges and Judges of First Instance of the Federal District and Territories, and shall also enact all laws submitted by the Executive. The Circuit and District Judges and the Superior and Inferior Judges of the Federal District and Territories shall take office not later than the first day of July, 1917, at which time such as shall have been temporarily appointed by the person now charged with the executive power of the nation shall cease to act.

Art. 7. For this occasion only, the votes for the office of Senator shall be counted by the Board of the First Electoral District of each

1857

1917

State or of the Federal District which shall be instituted for the counting of the votes of Representatives. This Board shall issue the respective credentials to the Senators-elect.

Art. 8. The Supreme Court shall decide all pending petitions of "amparo," in accordance with the laws at present in force.

Art. 9. The First Chief of the Constitutionalist Army, charged with the executive power of the Nation, is hereby authorized to issue the electoral law according to which, on this occasion, the elections to fill the various Federal offices shall be held.

Art. 10. All persons who shall have taken part in the Government emanating from the rebellion against the legitimate government of the Republic, or who may have given aid to the said rebellion and later taken up arms or held any office or commission of the factions which have opposed the constitutional government, shall be tried in accordance with the laws at present in force, unless they shall have been previously pardoned by the said constitutional government.

Art. 11. Until such time as the Congress of the Union and the State Legislatures shall legislate on the agrarian and labor problems, the bases established by this Constitution for the said laws shall be put into force throughout the Republic.

Art. 12. All Mexicans who shall have fought in the ranks of the constitutional army and their children and widows and all other persons who shall have

1857

1917

rendered service to the cause of the revolution, or to public instruction, shall be preferred in the acquisition of lots to which Article 27 refers, and shall be entitled to such rebates as the law shall determine.

Art. 13. All debts contracted by working men on account of work up to the date of this Constitution with masters, their subordinates and agents, are hereby declared wholly and entirely discharged.

Art. 14. The Departments of Justice and of Public Instruction and Fine Arts are hereby abolished.

Art. 15. The citizen at present charged with the executive power is hereby authorized to issue the law of civil responsibility applicable to all promoters, accomplices and abettors of the offenses committed against the constitutional order in the month of February, 1913, and against the Constitutionalist Government.

Art. 16. The Constitutional Congress in the regular period of sessions, to begin on the first day of September of the present year, shall issue all the organic laws of the Constitution which may not have been already issued in the extraordinary session to which Transitory Article number 6 refers; and it shall give preference to the laws relating to personal guarantees and to Articles 30, 32, 33, 35, 36, 38, 107 and the latter part of Article 111 of this Constitution.

Signed at Querétaro de Arteaga,
January 31, 1917.

NOTES

Art. 3, Line 2—secular. It should be noted in this connection that public instruction imparted in the public schools of Mexico for the past thirty years has been largely dominated by the positivist theories of Auguste Comte, as applied by Dr. Gabino Barrera, a noted Mexican educator.

Art. 3, Line 2—primary. The educational system in Mexico is patterned in the main after the French. There are, accordingly, no high schools as these exist in the United States. Primary instruction is regulated by the federal government in the federal district and territories and by the states, and is generally subdivided into lower ("elemental") covering four years and higher ("superior"), comprising the fifth and sixth years. From here pupils graduate to the "Escuela Nacional Preparatoria"—an institution whose curriculum embraces high school and collegiate studies as given in the United States—prior to entering the professional schools of law, medicine, engineering, etc.

Art. 21, Line 4 and Art. 73, VI, 5—Public Attorney "Ministerio Público." As it exists today, this institution dates back to the fourteenth century. Its duty is to see that the law is carried out, and it is, theoretically at least, independent of the judiciary. An important characteristic is that it does not require, as in the common law, any indictment or complaint before acting. Its most important function is in criminal cases where it is bound to prosecute all criminal offences, excepting only certain offences of a personal nature, such as slander, adultery, etc. In civil suits, its powers are more restricted and discretionary, although it is called upon to intervene in cases involving status, minors, bankruptcies, etc. In a word, it represents society.

Art. 24, Line 7—discharging in one instance. This ancient practice differed from the Scottish verdict of "not proven," where only moral stigma attached, in that a reasonable presumption of guilt in first instance rendered the accused liable to a second trial if further evidence developed later.

Art. 27, Line 6—Public Utility. While the term "public utility" may be somewhat misleading, it is felt that "public use" may be even more so. The same expression ("*Por causa de utilidad pública*") is to be found in the 1857 Constitution, and has always been interpreted by the courts of Mexico in the sense of public interest, as in the case of land expropriated for the surface work of a mine, etc.

Owing to the importance that may attach to the changes made in the 1917 text, the original Spanish in each case is given:

"Art. 27. *La propiedad de las personas no puede ser ocupada sin su consentimiento, sino por causa de utilidad pública y previa indemnización*" (1857).

"Art. 27. . . . *Esta (la propiedad privada) no podrá ser expropiada sino por causa de utilidad pública y mediante indemnización*" (1917).

Art. 27, Line 28—Decree of January 6, 1915. This decree, promulgated by Carranza under this date, declares null and void all alienations of lands, waters and forests made by the Mexican government or any inferior authorities thereof after December 1, 1876 which shall have illegally comprised properties formerly belonging to, or occupied by, Indian communal settlements. The decree further grants these settlements the right to demand the restoration of these properties, and provides that the case be heard before the agrarian commissions or other administrative authorities, without any judicial recourse whatsoever, except only to demand the payment of an indemnity, in case the decision ordering such restoration be later invalidated by the courts.

Art. 27, I, Line 13—Zone. The principle restricting the right of foreigners to acquire real property within certain zones dates back many years and has found expression in several legislative enactments, among others the Mining Law of which went into effect on January 1, 1910. The text of the 1917 Constitution broadens considerably the scope of these limitations. The general rule hitherto obtaining in Mexico had been that foreigners might acquire real property within the prohibited zones on obtaining special permission from the executive; but the new constitutional provision establishes a principle of absolute prohibition.

Art. 27, III, Line 11—*dependents*. The word in the original ("*asimilados*") would certainly cover the English term tertiaries, or members of the third or worldly orders, Franciscan, Dominican, etc.; but it is apparently sufficiently sweeping to embrace societies of the laity not necessarily bound by religious vows, as for instance, the Knights of Columbus in the United States, and even persons serving in any religious ceremony, such as acolytes, etc.

Art. 27, VII, Line 38—*Law of June 25, 1856*. This measure is known as the "disamortization law." It provided for the taking of the numerous real properties (landed estates, buildings, etc.) belonging to convents and other religious communities, Indian settlements, etc., and their disposition among private individuals. This was effected in various ways, as for example by adjudicating these properties among the tenants, who were, however, held to acknowledge an indebtedness for their value and to pay the prior owner an annual interest, with the right of redemption. In the absence of a tenant, the properties were auctioned and the purchaser assumed an obligation in favor of the owner, as in the preceding case. The law in question contained many other provisions, but these suffice to show the important place it occupies in the law of real property in Mexico.

Art. 27, VII (f). Although this section embodies principles very similar to the "homestead" laws, it has not been deemed advisable to use this expression. The juridical conception of the "homestead" has no exact replica in the civil law, while the analogous term "patrimonium" embraces more than the common law "homestead."

Art. 27, VII, Line 6—1876. This year marks the beginning of the first presidential term of General Porfirio Diaz, which brought the first large influx of foreign capital.

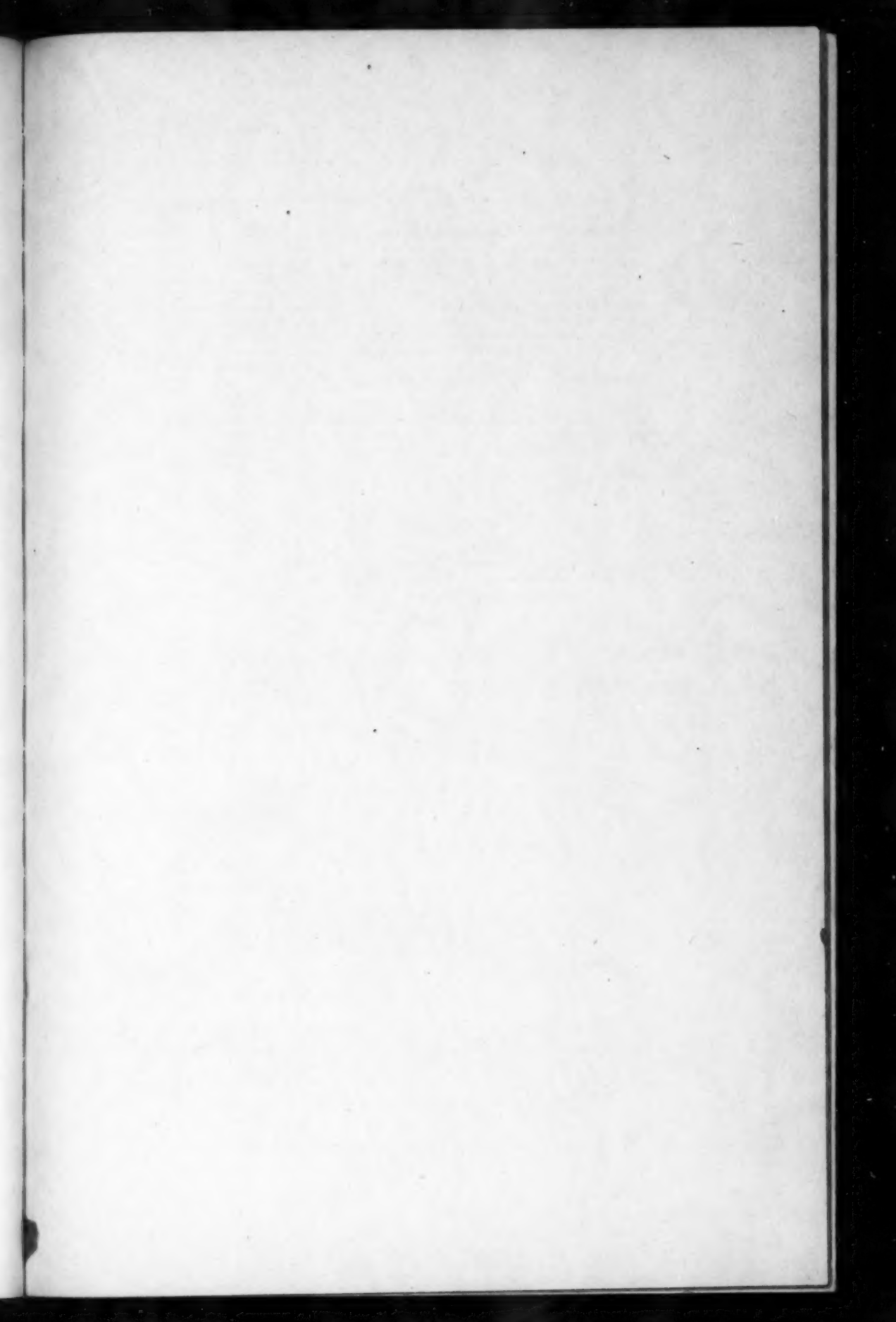
Art. 33 of 1917. This wording follows the underlying principles of the 1857 Constitution, with the important change of the class of aliens affected. By the 1857 Constitution expulsion was possible only in the case of "undesirable" ("*perniciosos*") aliens, while the 1917 text makes the provision applicable to any alien whose presence the executive may deem "inexpedient" ("*inconveniente*").

Art. 72, XXIV—*Office of the Comptroller of the Treasury*. The "Contaduría Mayor," established by the act of June 6, 1904, is a bureau directly dependent upon the House of Representatives. Its purpose is to examine and audit the accounts submitted by the Treasurer of the Nation. The office extends its audit even to the acts of secretaries of executive departments, in matters pertaining to the expenditure of public funds. If it is proved that the expenditure was authorized and legally made, the "Contaduría Mayor" releases the official from all liability thereunder; if not, it is incumbent upon it to advise the proper functionary so that the corresponding liability may be exacted. The House of Representatives finally passes upon all governmental expenditures, on the basis of the report submitted by the "Contaduría Mayor."

Art. 107—*Amparo*. This unique feature of Mexican jurisprudence combines the essential elements of the extraordinary writs of *habeas corpus*, *certiorari* and *mandamus*. It is a federal procedure designed to give immediate redress when any of the fundamental rights of man are infringed by any authority, irrespective of category, or to excuse the obedience of a law or decree which has invaded the federal or local sphere. Its use is most extensive, embracing minors, persons absent abroad acting through a "next friend," corporations, etc. An important feature is that it merely gives redress to a specific person or entity, and never makes any general statement of law. It could, hence, never declare a law unconstitutional, though it would give immediate relief, so soon as the law in question acted upon any person.

Art. 130—*Interior*. Although the term "Gobernación" is correctly translated by "Interior," it should be noted that the jurisdiction of these executive departments in Mexico and the United States is wholly different. To "Gobernación" pertain all matters of relationship between the federal and state governments, elections, etc.

Art. 130. The "Leyes de Reforma" constitute a group of organic laws which, as their name indicates, aimed to bring about certain social reforms, foremost among which was the complete separation of church and state. They represent the outgrowth of that movement, one of whose chief manifestations was the Constitution of 1857, although not incorporated in that document. The most important and radical provisions of these laws were enacted in 1859 while the Liberal Government was established at Vera Cruz. They were consolidated into a single law enacted during the presidency of Sebastian Lerdo de Tejada, under date of December 14, 1874. Its provisions form the basis of articles 3, 5, portions of 27, and Art. 130 of the Constitution of 1917, but many sweeping innovations have been introduced.



Jan. 10. 1879. "Landing of the ship" at the mouth of the river. The ship was anchored in the river, and the passengers landed. The ship was a small schooner, and the passengers were a party of about 20 persons. The ship was anchored in the river, and the passengers landed. The ship was a small schooner, and the passengers were a party of about 20 persons. The ship was anchored in the river, and the passengers landed. The ship was a small schooner, and the passengers were a party of about 20 persons.

MODERN INSURANCE PROBLEMS

THE ANNALS for March, 1917

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THE PURPOSES AND IDEALS OF THE MEXICAN REVOLUTION

Supplement to the January, 1917, issue
of THE ANNALS

(Addresses delivered at a joint session of the American
Academy of Political and Social Science and the
Pennsylvania Arbitration and Peace Society,
held on November 10, 1916)

Addressed by:

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HON. YGNACIO BONILLAS, *Ambassador of Mexico to the
United States*

HON. ALBERTO J. PANI, *Minister of Finance*

HON. JUAN B. ROJO, *Counsellor of the Mexican Ministry of
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